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ABSTRACT

"The ERIC Review" is published three times a year and announces research results, publications, and new programs relevant to each issue's theme topic. This issue explores performance-based assessment via two principal articles: "Performance Assessment" (Lawrence M. Rudner and Carol Boston); and "Alternative Assessment: Implications for Social Studies" (Pat Nickell). In addition, the features include: (1) standards information; (2) a listing of commercial publishers and performance-based assessment; (3) performance-based aspects of the National Assessment of Educational Progress (NAEP); (4) an alternative assessment reading list; (5) alternative assessment resource organizations list; and (6) an annotated list of 18 new publications available from the ERIC Clearinghouses. (JLB)

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Vol. 3 Issue 1, Winter 1994

THE ERIC

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Performance-Based Assessment

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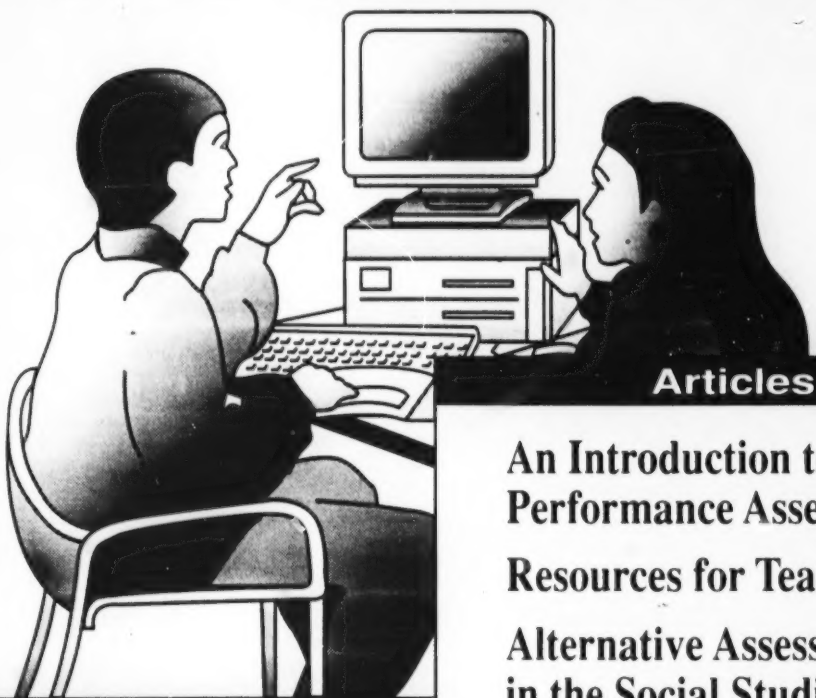

Articles

- An Introduction to Performance Assessment
- Resources for Teachers
- Alternative Assessment in the Social Studies

Features

- Resource Organizations
- Reading List
- Federal Initiatives
- ERIC System Developments

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An Important Message to Our Readers

This issue of *The ERIC Review* explores how teachers, administrators, and parents can determine what students know and can do through ways other than standardized tests. Many educators agree that the average (or "norm") is an inadequate standard by which to judge the quality of student knowledge and performance.

People are using a variety of terms to describe assessment procedures that develop more complete pictures of what students know and can do than are possible with the familiar norm-referenced achievement and aptitude tests. These terms include *authentic assessment*, *alternative assessment*, *performance-based assessment*, and *practical assessment*. In this issue, we use the terms interchangeably, although we recognize the nuances among them.

Authentic assessment, for example, is generally used to refer to activities that are considered genuine and meaningful in themselves. *Alternative assessment* is a broad term that refers to any nonstandardized testing. *Performance-based assessment* requires students to show their knowledge and skills in an active way. *Practical assessment* is most commonly used in Europe to describe evaluations based on real-world situations.

With all that has been written about alternative assessment, what do we hope to accomplish with this issue of *The ERIC Review*? As in previous issues, we provide an overview of the subject as well as descriptions of numerous resources and related projects. We have tried to "pull it all together" from a practical point of view. Our goal is for readers to come to appreciate the differing arguments for performance assessment and the statements of those who urge caution. After reading this issue, educators should: (1) have enough information to consider implementing performance assessment and its associated activities; and (2) know where to go for further assistance.

We hope you'll find the features, project descriptions, and resource lists helpful. **The materials in this journal are in the public domain and may be reproduced and disseminated freely.** If you'd like additional information about what the Educational Resources Information Center has to offer, details on how to access the database, or a referral to one of the 16 subject-specific ERIC Clearinghouses, please call 1–800–LET–ERIC.

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Contents

Performance Assessment 2
Lawrence M. Rudner and Carol Boston

One School Experiments with Performance-Based Assessments 13
Carol Boston

U.S. Department of Education Funds Standards Groups 15

Curriculum, Teaching, and Assessment Standards: The National Council of Teachers of Mathematics 16
Thomas A. Romberg

Standards, Assessments, and the National Education Goals 17
Edward Fuentes

Commercial Publishers and Performance-Based Assessment 18
Matthew Soska

Performance-Based Aspects of the National Assessment of Educational Progress (NAEP) 19
Gary W. Phillips and Sheida White

News from the ERIC System 20

The Center for Research on Evaluation, Standards, and Student Testing 20
Laurie E. Gronlund

Alternative Assessment Reading List 21

Alternative Assessment Resource Organizations List 26

Alternative Assessment: Implications for Social Studies 29
Pat Nickell

New Titles in Education 32

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The ERIC Review, published three times a year by ACCESS ERIC with support from the U.S. Department of Education's Office of Educational Research and Improvement (OERI), announces research results, publications, and new programs. It also contains information on the Educational Resources Information Center (ERIC), its subject-specific clearinghouses, and support components. The ideas and opinions expressed in this publication do not necessarily reflect the positions or policies of the Department of Education or OERI.

For more information about ERIC or a free subscription to *The ERIC Review*, call ACCESS ERIC toll free at 1–800–LET–ERIC.

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You can access ERIC at about 3,000 locations around the world. Typically, university, state, and large city public libraries offer access to ERIC through their microfiche collections and online or CD-ROM searches. The ERIC database is also accessible through some computer networks.

In addition, documents selected for the database are abstracted and announced in ERIC's monthly journal, *Resources in Education*. The full text of most documents announced in ERIC is available in microfiche or paper copy from the ERIC Document Reproduction Service. ERIC announces journal literature in a separate monthly publication, *Current Index to Journals in Education*.

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THE ERIC Review

PERFORMANCE ASSESSMENT

by Lawrence M. Rudner and Carol Boston

So, what's all the hoopla about? Federal commissions have endorsed performance assessment. It's been discussed on C-SPAN and in a number of books and articles. Full issues of major education journals, including *Educational Leadership* (April 1989 and May 1992) and *Phi Delta Kappan* (February 1993), have been devoted to performance assessment. A surprisingly large number of organizations are actively involved in developing components of a performance assessment system. Chances are good that one or more of your professional associations is in the middle of debating goals and standards right now.

Is this just the latest bandwagon? Another short-term fix? Probably not. The performance assessment movement encompasses much more than a technology for testing students. It requires examining the purposes of education, identifying skills we want students to master, and empowering teachers (Smith and Cohen, 1991). Even without an assessment component, these activities can only be good for education. You can be certain they will have an impact on classrooms.

This article describes performance assessments, weighs their advantages and disadvantages as instructional tools and accountability measures, and offers suggestions to teachers and administrators who want to use performance assessments to improve teaching and learning.

Key Features of Performance Assessment

The Office of Technology Assessment (OTA) of the U.S. Congress (1992) provides a simple, yet insightful, definition of performance assessment:

> *testing that requires a student to create an answer or a product that demonstrates his or her knowledge or skills.*

A wide variety of assessment techniques fall within this broad definition. Several are described in table 1. One key feature of all performance assessments is that they require students to be active participants. Rather than choosing from presented options, as in traditional multiple-choice tests, students are responsible for creating or constructing their responses. These may vary in complexity from writing short answers or essays to designing and conducting experiments and demonstrations or creating comprehensive portfolios. It is important to note that proponents of "authentic assessment" make distinctions among the various types of performance assessments, preferring those that have meaning and value in themselves to those that are meaningful primarily in an academic context. In a chemistry class, for example, students might be asked to identify the chemical composition of a premixed solution by applying tests for various properties, or they might take samples from local lakes and rivers and identify pollutants. Both assessments would be performance-based, but the one involving the real-world problem would be considered more authentic.

Testing has traditionally focused on whether students get the right answers; *how* they arrive at their answers has been considered important only during the test development. When students take a multiple-choice mathematics test, for example, there is no way to distinguish among those who select the correct answer because they truly understand the problem, those who understand the problem but make a careless calculation mistake, and those who have no idea how to do the work but simply guess correctly. Performance assessments, on the other hand, require students to *demonstrate* knowledge or skills; therefore, the process by which they solve problems becomes important. To illustrate, if high school juniors are asked to demonstrate their understanding of interest rates by comparison shopping for a used-car loan and identifying the best deal, a teacher can easily see if they understand the concept of interest, know how to calculate it, and perform mathematical operations accurately.

Lawrence M. Rudner is director of the ERIC Clearinghouse on Assessment and Evaluation at The Catholic University of America. Carol Boston is publications coordinator at ACCESS ERIC, the outreach component of the ERIC system.

Table 1: Some Performance Assessment Techniques

Projects—Projects are comprehensive demonstrations of skills or knowledge. They require a broad range of competencies, are often interdisciplinary in focus, and require student initiative and creativity. Teachers or trained judges score each project against standards of excellence known to all participants ahead of time.

As part of a project, students may be required to conduct a demonstration or give a live performance in class or before other audiences. Projects can take the form of competitions between individual students or groups, or they may be collaborative activities that students work on over time. Science fair projects are a familiar example of this type of performance assessment.

Group projects—Group projects enable a number of students to work together on a complex problem that requires planning, research, internal discussion, and group presentation. This technique is particularly attractive because it facilitates cooperation and reinforces a valued outcome. The California State Department of Education reports success in using group projects.

Interviews/oral presentations—Interviews and oral presentations allow students to verbalize their knowledge. Particularly with younger children, interviews are more likely to elicit informative responses than open-ended, written questions. The 1969 and 1976 National Assessments of Educational Progress (NAEP) Citizenship Assessments used many interview questions.

An obvious example of oral assessment occurs in the foreign languages: fluency can be assessed only by hearing the student speak. As audio and video become increasingly available to record performances, the use of oral presentations for assessment is likely to increase.

Constructed-response questions—Constructed-response questions require students to produce their own answers rather than select from an array of possible answers (as with multiple-choice items). A constructed-response question may have just one correct answer, or it may be more open-ended, allowing a range of responses. The form can also vary, ranging from filling in a blank or writing a short answer, to drawing on a graph or diagram, to writing out all the steps in a geometry proof. Teachers often use constructed-response questions in classroom assessments.

Essays—Essays have long been used to assess a student's understanding of a subject through a written description, analysis, explanation, or summary. Essays can demonstrate how well a student uses facts in context and structures a coherent discussion. Answering essay questions effectively requires critical thinking, analysis, and synthesis.

Essays and other writing samples may also be used to assess students' composition skills, including spelling, grammar, syntax, and sentence and paragraph structure. Considerable research has been conducted on the standardized and objective scoring of writing assessments. Many states, including Maryland and North Carolina, administer writing assessments at several grade levels.

Experiments—Experiments can be used to test how well a student understands scientific concepts and can carry out scientific processes. Such assessment activities encourage students to "do science" by developing hypotheses, planning and carrying out experiments, writing up findings, using the skills of measurement and estimation, and applying scientific facts and concepts.

A few states are developing standardized scientific tasks or experiments that all students must conduct to demonstrate their scientific understanding and skills. Groups such as the American Association for the Advancement of Science, the National Science Teachers Association, the National Science Foundation, and the U.S. Department of Education's Eisenhower Program are strong advocates for using experiments in classrooms.

Demonstrations—Demonstrations give students opportunities to show their mastery of subject-area content and procedures. Students in a physics class might, for example, demonstrate their understanding of principles of physics in a demonstration using pulleys, gears, and inclined planes. Students in a paramedics course could demonstrate mastery of lifesaving techniques by resuscitating a dummy.

Portfolios—Portfolios are usually files or folders that contain collections of a student's work. They furnish a broad portrait of individual performance, assembled over time. As students put together their portfolios, they must evaluate their own work, a key feature of performance assessment. Portfolios are most common in the subject areas of English and language arts, where drafts, revisions, works in progress, and final papers are typically included to show students' development. A few states and districts use portfolios for science, mathematics, and the arts; others are planning to use them for demonstrations of workplace readiness. Vermont and Michigan are among the states taking the lead on portfolio use for assessment.

From "Assessing Civics Education," *ERIC Digest Series* (1991) by Lawrence M. Rudner and *Testing in American Schools: Asking the Right Questions* (1992) by the Office of Technology Assessment, Congress of the United States.

In performance assessment, items directly reflect intended outcomes. Whereas a traditional test might ask students about grammar rules, a performance assessment would have them demonstrate their understanding of English grammar by editing a poorly written passage. A traditional auto mechanics test might include questions about a front-end alignment; a performance assessment would have students do one.

Performance assessments can also measure skills that have not traditionally been measured in large groups of students—skills such as integrating knowledge across disciplines, contributing to the work of a group, and developing a plan of action when confronted with a novel situation. Grant Wiggins (1990) captures their potential nicely:

> *Do we want to evaluate student problem-posing and problem-solving in mathematics? Experimental research in science? Speaking, listening, and facilitating a discussion? Doing document-based historical inquiry? Thoroughly revising a piece of imaginative writing until it 'works' for the reader? Then let our assessment be built out of such exemplary intellectual challenges.*

Here We Go Again?

You might ask, "Is performance assessment really new?" Good classroom teachers have used projects and portfolios for years, preparing numerous activities requiring students to blend skills and insights across disciplines. Performance assessment has been particularly common in vocational education, the military, and business. For example, the Carl D. Perkins Vocational and Applied Technology Act of 1990 heavily emphasized standards and assessment. ERIC has used "performance tests" as a descriptor since the birth of the ERIC system in 1966.

What *is* new is the widespread interest in the potential of performance assessment. Many superintendents, state legislators, governors, and federal officials see performance tests as a means to motivate students to learn and schools to teach concepts and skills that are more in line with today's expectations. This perspective will be called the *motivator viewpoint* in this article. Many researchers, curriculum specialists, and teachers, on the other hand, see performance assessment as empowering teachers by providing them with better instructional tools and a new emphasis on teaching more relevant skills—a perspective that will be referred to here as the *empowerment viewpoint*. Proponents of both viewpoints agree on the need to change assessment methods but differ in their views about how assessment information should be used.

"Advocates of the motivator and empowerment viewpoints concur that performance assessments can form a solid foundation for improving schools and increasing what students know and can do."

On the Value of Performance Assessments

Advocates of the motivator and empowerment viewpoints concur that performance assessments can form a solid foundation for improving schools and increasing what students know and can do. However, the two groups frame the advantages differently. Their positions are sketched here briefly, then developed more fully in the sections that follow.

The motivators emphasize that performance-based assessments, if instituted on a district, state, or national level, will allow us to monitor the effectiveness of schools and teachers and track students' progress toward achieving national educational goals (see "Standards, Assessments, and the National Education Goals" on p. 17). According to the motivator viewpoint, performance assessments will make the education system more accountable for results. Proponents expect performance assessments to:

- prompt schools to focus on important, performance-based outcomes;
- provide sound data on achievement, not just aptitude;
- allow valid comparisons among schools, districts, and states; and
- yield results for every important level of the education system, from individual children to the nation as a whole.

Those in the empowerment camp, on the other hand, tend to focus on how performance assessments will improve teaching and learning at the classroom level. Instructional objectives in most subject areas are being redefined to include more practical applications and more emphasis on synthesis and integration of content and skills. Performance assessments that are closely tied to this new curriculum can give teachers license to emphasize important skills that traditionally have not been measured. They can also provide teachers with diagnostic information to help guide instruction and give students opportunities to assess their own progress.

High-Stakes Performance Assessments as Motivators

One of the most historic events concerning education in the United States occurred in September 1989, when the President and the nation's governors held an education summit in Charlottesville, Virginia. Together, the participants hammered out six far-reaching national education goals, effectively acknowledging that education issues transcend state and local levels to affect the democratic and economic foundations of the entire country. In a closing statement, participants announced,

> *We unanimously agree that there is a need for the first time in this nation's history to have specific results-oriented goals. We recognize the need for . . . accountability for outcome-related results.*

Consensus is now building among state legislators, governors, members of Congress, federal officials, and the general public regarding the desirability and feasibility of some sort of voluntary national assessment system linked with high national standards in such subject areas as mathematics, science, English, history, geography, foreign languages, and the arts. A number of professional organizations have received funding to coordinate the development of such standards (see "U.S. Department of Education Funds Standards Groups" on p. 15). The groundbreaking work of the National Council of Teachers of Mathematics (NCTM) serves as a model for this process: NCTM published *Curriculum and Evaluation Standards for School Mathematics* in 1989 after gathering extensive input from the field and recently published draft standards for mathematics assessment (see "Curriculum, Teaching, and Assessment Standards" on p. 16).

The National Council on Education Standards and Testing (NCEST), an *ad hoc* committee of educators and policymakers created to advise Congress on the desirability and feasibility of national standards and tests, described the motivational effect of a national system of assessments in its 1992 report, *Raising Standards for American Education*:

> *National standards and a system of assessments are desirable and feasible mechanisms for raising expectations, revitalizing instruction, and rejuvenating educational reform efforts for all American schools and students.*

As part of the Goals 2000: Educate America Act, a new group, the National Education Standards and Improvement Council (NESIC), has been proposed to certify the standards and the assessments based on them.

Envision, if you will, the enormous potential of an assessment that perfectly and equitably measures the right skills. Developing standards and high-quality assessments has "the potential to raise learning expectations at all levels of education, better target human and fiscal resources for educational improvement, and help meet the needs of an increasingly mobile population" (NCEST, 1992). This is a shared vision. At least a half-dozen groups have begun calling for a national assessment system or developing instrumentation during the past 2 years (see table 2).

Recognizing that tests tend to influence curriculum, NCEST and other groups suggest that assessments should be developed to reflect the new high

Table 2: Calls for New National Assessments

National Assessment of Educational Progress (NAEP)—A congressionally mandated project of the U.S. Department of Education's National Center for Education Statistics, NAEP monitors U.S. students' performance in several subject areas by administering biennial assessments to random samples of 4th-, 8th-, and 12th-graders. Since 1990, NAEP has reported state performance data on a trial basis. Congress has considered proposals to permit NAEP to make additional state-by-state comparisons and to allow district and school comparisons.

The National Council on Education Standards and Testing (NCEST)—This 34-member group was authorized by Congress (PL 102–62) to make recommendations regarding the establishment of national standards and a voluntary system of assessments. Its report, *Raising Standards for American Education*, outlined a vision for creating national standards and a system to measure the attainment of those standards. The National Education Standards and Improvement Council (see below) is expected to carry out the work that NCEST started.

The National Education Goals Panel—This group of state governors, members of Congress, and administration officials has established resource groups to identify indicators that best measure progress toward each of the six national goals.

National Education Standards and Improvement Council—The Goals 2000: Educate America Act calls for creating a 20-person National Education Standards and Improvement Council to certify voluntary national standards in each subject area and eventually to certify the standards developed by states. This group would also allocate funds to state and local education agencies to develop and field-test assessments. To ensure quality and careful implementation, any newly certified or developed assessments would not be used for high-stakes decisions directly affecting individual students for several years.

The New Standards Project—A joint effort of the National Center on Education and the Economy in Rochester, New York, and the Learning Research and Development Center at the University of Pittsburgh, the New Standards Project is a grassroots partnership of several states and large school districts working to adopt a set of very high national education standards and to develop a new kind of assessment system that can gauge student progress toward those standards. Performance-based assessments for mathematics, English/language arts, and science are in development now.

The Secretary's Commission on Achieving Necessary Skills (SCANS)—This group, sponsored by the U.S. Department of Labor, has outlined competencies high school graduates need in order to enter the workplace. Similar calls for industry-based skills standards have come from the National Center on Education and the Economy and the National Advisory Commission on Work-Based Learning. SCANS recently awarded a contract to the American College Testing Programs to develop instruments to assess those competencies.

standards. Such assessments would not be immediately associated with high stakes. However, once issues of validity, reliability, and fairness have been resolved, these assessments "could be used for such high-stakes purposes as high school graduation, college admission, continuing education, or certification for employment. Assessments could also be used by states and localities as the basis for system accountability" (NCEST, 1992).

The United States already has one national assessment in place, the National Assessment of Educational Progress (NAEP). Since 1969, the U.S. Department of Education-sponsored NAEP has been used to assess what our nation's children know in a variety of curriculum areas, including mathematics, reading, science, writing, U.S. history, and geography. Historically, NAEP has been a multiple-choice test administered to random samples of 4th-, 8th-, and 12th-graders in order to report on the educational progress of our nation as a whole. As interest in accountability has grown, NAEP has begun to conduct trial state-level assessments. NAEP is also increasing the number of performance-based tasks to better reflect what students can do (see "Performance-Based Aspects of the National Assessment of Educational Progress" on p. 19).

Supporters argue that a system of national assessments would improve education by giving parents and students more accurate, relevant, and comparable data and encouraging students to strive for world-class standards of achievement. Such assessments would hold students in all parts of the country and in urban, suburban, and rural areas to the same high standards. If assessment results were tied with high-stakes consequences such as graduation and college admission, supporters say, schools and students would be motivated to improve.

Critics of a national assessment system are equally visible. The National Education Association and other professional associations have argued that high-stakes national assessments will not improve schooling and could easily be harmful. They are particularly concerned that students with disabilities, students whose native language is not English, and students and teachers in schools with minimal resources will be penalized under such a system. If students are expected to demonstrate scientific principles through hands-on experiments, for example, how will those in schools with antiquated laboratory equipment fare?

Some critics of a national assessment system also note that it runs counter to the American tradition of local and state control of education. Fearing that a national assessment system might not be a good model and could short-circuit current reform efforts, The National Center for Fair and Open Testing, or FairTest, testified before Congress that federal dollars would be better spent in support of state-level reform efforts.

"In order to implement performance assessment fully, administrators and teachers must have a clear picture of the skills they want students to master and a coherent plan for how students are going to master those skills."

Performance Assessment for Teacher Empowerment

An enormous amount of activity is taking place in the area of establishing national standards and a system of assessments. The assessments are expected to encompass performance-based tasks that call on students to demonstrate what they can do. They may well have strong accountability features and be used eventually to make high-stakes decisions. Should school principals and classroom teachers get excited about performance assessment now? Absolutely. Viewed in its larger context, performance assessment can play an important part in the school reform/restructuring movement:

> *Performance assessment can be seen as a lever to promote the changes needed for the assessment to be maximally useful. Among these changes are a redefinition of learning and a different conception of the place of assessment in the education process (Mitchell, 1992).*

In order to implement performance assessment fully, administrators and teachers must have a clear picture of the skills they want students to master and a coherent plan for how students are going to master those skills. They need to consider how students learn and what instructional strategies are most likely to be effective. Finally, they need to be flexible in using assessment information for diagnostic purposes to help individual students achieve. This level of reflection is consistent with the best practices in education. As Joan Herman, Pamela Aschbacher, and Lynn Winters note in their excellent book, *A Practical Guide to Alternative Assessment* (1992),

> *No longer is learning thought to be a one-way transmission from teacher to students, with the teacher as lecturer and the students as passive receptacles. Rather, meaningful instruction engages students actively in the learning process. Good teachers draw on and synthesize discipline-based knowledge, knowledge of student learning, and knowledge of child development. They use a variety of instructional strategies, from direct instruction to coaching, to involve their students in meaningful activities . . . and to achieve specific learning goals.*

Quality performance assessment, the authors note, is a key part of this vision because "good teachers constantly assess how their students are doing, gather evidence of problems and progress, and adjust their instructional plans accordingly."

Properly implemented, performance assessment offers an opportunity to

align curriculum and teaching efforts with the important skills we wish children to master. Cognitive learning theory, which emphasizes that knowledge is constructed and that learners vary, provides some insight into what an aligned curriculum might look like (see table 3).

Linking curriculum, instructional strategies, and performance-based assessments encourages teachers to focus on high-order, integrated skills, communicate goals and standards, and experiment with approaches to help students achieve them. An aligned curriculum that features meaningful learning and offers students choices in demonstrating their knowledge empowers them to be more responsible for their own education and increases their motivation. When curriculum is aligned with assessment, teachers, parents, and students also have clearer benchmarks for measuring progress. Assessments can be used to provide diagnostic information about what individual students know and can do and where they need additional assistance. They can also alert teachers to necessary changes in classroom instructional strategies.

Not only does performance assessment support student learning by enabling teachers to see what students know and can do, but the act of assessment itself is a learning opportunity for students. Portfolio assessment is a case in point. Most versions of portfolio assessment call for student self-reflection either in selecting pieces or in evaluating progess over the course of a semester or a year. Students are thus responsible for monitoring their own learning and for assessing the implications of their progress. The process of assessment is itself a constructivist learning experience, requiring students to apply thinking skills, to understand the nature of quality performance, and to provide feedback to themselves and others. Students and teachers alike are empowered through the experience.

Issues and Warnings

Performance assessments, like standardized tests, have their shortcomings, particularly when used for high-stakes purposes. Many of the criticisms

Table 3. Aligning Instruction and Assessment: Implications from Cognitive Learning Theory (CLT)

CLT: Knowledge is constructed. Learning is a process of creating personal meaning from new information and prior knowledge.

Implications for Instruction/ Assessment:

- Encourage discussion of new ideas.
- Encourage divergent thinking, multiple links and solutions, not just one right answer.
- Encourage multiple modes of expression, for example, role play, simulations, debates, and explanations to others.
- Emphasize critical thinking skills: analyze, compare, generalize, predict, hypothesize.
- Relate new information to personal experience, prior knowledge.
- Apply information to a new situation.

CLT: Learning isn't necessarily a linear progression of discrete skills.

Implications for Instruction/ Assessment:

- Engage all students in problem solving.
- Don't make problem solving, critical thinking, or discussion of concepts contingent on mastery of routine basic skills.

CLT: There is great variety in learning styles, attention spans, memory, developmental paces, and intelligences.

Implications for Instruction/ Assessment:

- Provide choices in tasks (not all reading and writing).
- Provide choices in how to show mastery/competence.
- Provide time to think about and do assignments.
- Don't overuse timed tests.
- Provide opportunity to revise, rethink.
- Include concrete experiences (manipulatives, links to prior personal experience).

CLT: People perform better when they know the goal, see models, and know how their performance compares to the standard.

Implications for Instruction/ Assessment:

- Discuss goals; let students help define them (personal and class).
- Provide a range of examples of student work; discuss characteristics.
- Provide students with opportunities for self-evaluation and peer review.
- Allow students to have input into standards.

CLT: It's important to know when to use knowledge, how to adapt it, how to manage one's own learning.

Implications for Instruction/ Assessment:

- Give real-world opportunities (or simulations) to apply/adapt new knowledge.
- Have students self-evaluate: think about how they learn well/ poorly; set new goals; why they like certain work.

CLT: Motivation, effort, and self-esteem affect learning and performance.

Implications for Instruction/ Assessment:

- Motivate students with real-life tasks and connections to personal experiences.
- Encourage students to see connection between effort and results.

CLT: Learning has social components. Group work is valuable.

Implications for Instruction/ Assessment:

- Provide group work.
- Incorporate heterogeneous groups.
- Enable students to take on a variety of roles.
- Consider group products and group processes.

From *A Practical Guide to Alternative Assessment* (1992) by Joan L. Herman, Pamela R. Aschbacher, and Lynn Winters. Alexandria, VA: Association for Supervision and Curriculum Development.

leveled against such assessments center around corruptibility, the appropriateness of using tests as motivators, and equity issues. There are also serious psychometric issues related to the use of performance assessments.

Corruptibility—Will high-stakes performance tests become corrupted over time; that is, will teachers teach to the test and therefore destroy its value? Proponents of this view need only point to the New York State Regents Examination, a high-stakes, high-standards, curriculum-relevant testing program that was established and later abandoned because of its unforeseen adverse effects. As Goslin (1963) noted, "Many have argued that (the Regents Exams) set limits on the achievement of students through a stagnation in the development of new teaching methods and in unwillingness of school officials to experiment with curriculum innovation." The counter viewpoint is that tests that are closely aligned with the curriculum and performance standards will be worth teaching to.

Motivation—Will high-stakes tests tied to rewards and sanctions be a motivator for all students? The Regents example indicated that many can be motivated by such a test. The minimum competency testing movement, however, has shown us that tests have little motivational value for students who see the standards beyond their easy reach. Conversely, students who pass such tests easily may not challenge themselves to reach higher levels.

Equity issues—Will assessment tasks be sensitive to the linguistic and cultural diversity of our schools? Will a single set of goals and standards be appropriate for all Americans? Is it realistic to expect students in wealthy and poor school districts to demonstrate the same levels of achievement? Some argue that any standards must be fixed to have meaning, claiming that second-class standards will lead to second-class learning. Others argue that instructional decisions should be kept at the local level, where diversity can best be addressed reasonably (Garcia, 1993). Both advocates and opponents of performance assessment recognize that performance tasks can place a significant linguistic demand on students and that this is an issue that needs further thought and consideration. Pointing to past practices, some opponents fear that other equity issues, such as the fact that schools vary greatly in terms of resources available, will be ignored.

Psychometric issues—Even advocates of performance assessment recognize that psychometric issues dealing with generalizability and reliability need to be overcome. While performance assessment tasks can accurately measure outcomes that they closely resemble, it is not at all clear that they generalize to more globally desired outcomes. It may not be apparent, for example, what general skill is being assessed by a complex item drawing on reading, mathematics, and science skills. And when performance-based assessments such as portfolios are used, raters judging the same work can diverge greatly in their evaluations. The recent evaluation of portfolio assessment in Vermont is but one illustration of this reliability concern (Koretz and others, 1992).

"... some opponents fear that other equity issues, such as the fact that schools vary greatly in terms of resources available, will be ignored."

The importance of these issues increases as the assessment stakes increase. In fact, much of the heated debate over a national assessment program focuses on the unfairness of any resultant rewards and sanctions if these issues are not addressed. Many members of the measurement community have urged caution due to psychometric concerns. Koretz, Madaus, Haertel, and Beaton (1992) testified before Congress that the psychometrics of alternative assessment has not been developed sufficiently to warrant its use as the basis for a high-stakes national assessment system. Linn (1993) has questioned the inferences to be drawn from some alternative assessment items and has raised several legitimate questions regarding validity. Koretz *et al.* (1992) noted that scores in a Vermont assessment varied from rater to rater.

Some individuals who advocate high-stakes assessments from the motivator viewpoint recognize these problems and call upon the measurement community to solve them. Indeed, there are a fair number of measurement researchers trying to do just that (Fredericksen, Mislevey, and Bejar, 1992). The issues are far less important when performance assessments are advocated from the empowerment viewpoint. Without the high stakes, the test is simply a diagnostic tool that can help teachers. If the results are not accurate, teachers will know soon enough and can make adjustments as necessary in instruction, scoring, and future assessments.

Criteria for Evaluating Alternative Assessments

Traditional testing methods focus on knowing facts and solving structured problems. The criteria used to validate these methods include efficiency, reliability, and comparability from year to year. Performance-based assessments tend to focus on higher-order thinking and the critical reasoning used to reach solutions. To prove that performance-based assessments are valid testing methods, we need to build upon the existing criteria. Linn, Baker, and Dunbar (1991) suggest using the following additional criteria to judge the validity of performance-based assessments:

Consequences—How do these performance-based assessments affect the ways teachers teach and students learn? What are the intended and unintended effects of these assessments? For example, teachers who focus primarily

on preparing students for an assessment can affect the validity of that assessment (its ability to measure student knowledge). Students who solve a mathematical problem using a memorized algorithm instead of a higher-order thinking skill such as problem solving also can affect the validity.

Fairness—Have fair test items been selected? Do scoring practices reflect students' capabilities fairly? How are we going to use and interpret the results? The shift from standard multiple-choice tests to performance-based assessments raises concern that the performance tasks chosen and the scoring procedures used be appropriate for all students taking the assessment.

Today's students have diverse backgrounds and experiences. Gaps exist between students due to differences in their familiarity with, and exposure to, the test items and in their motivation to perform and learn. Miller-Jones (1989) suggests that teachers use "functionally equivalent tasks specific to the culture and instructional context of the individual being assessed."

To score students fairly, Stiggins (1987) states that it is critical that the scoring procedures used ensure that the "performance ratings reflect the examinee's true capabilities and are not a function of the perceptions and biases of the persons evaluating the performance." One solution to fairness in scoring is to combine performance-based measurements with multiple-choice questions. However, Linn *et al.* (1991) believe that "greater reliance on judgmental reviews of performance tasks is inevitable."

Transfer and generalizability—How far do skills in one area transfer to another? What generalizations can we make from the test results? The concern for skill transfer and generalizability is equally important in performance-based assessments and in multiple-choice tests.

Measuring the degree to which skills transfer within a performance-based assessment is heavily dependent upon the task being performed. It is also important to acquire evidence of how students transfer skills to real-world problems.

Making generalizations about student achievement from test results is also dependent on the task being performed. Due to the limited degree of generalizability across tasks, teachers need to give multiple performance assessments to each student or provide different performance tasks to separate groups of students (Shavelson, Baxter, and Pine, 1992).

Cognitive complexity—Does the assessment require students to use higher-order thinking skills to solve and analyze problems instead of memorizing facts and solving well-structured, decontextualized problems? Performance-based assessments should focus on developing skills for higher-order thinking, such as problem solving and critical analysis. A student performing a hands-on science problem may not automatically use complex, cognitive processes. Judge the cognitive complexity by analyzing the task. Then, factor in the student's familiarity with the problem and the student's approach to solving it. Does the student's explanation of the process and the results go beyond, "That's how we did it in class"?

"Finding out how students and teachers perceive and react to the tasks and the assessment provides valuable, systematic information on how meaningful they are."

Content quality—Is the content of the assessment consistent with the current understanding in the field? Will the content stand the test of time? Most important, is the content worth the student's and the rater's time and effort? To ensure the quality of the content, subject experts may review both the tasks that the student performs and the overall design of the assessment.

Content coverage—Does the assessment adequately cover the subject matter? As Collins, Hawkins, and Frederiksen (1990) note, both students and teachers tend to underemphasize information not covered in the assessment. Also, if the subject matter is not adequately covered, test scores could be misleading, or instructions could be misinterpreted or misunderstood.

Meaningfulness—Does the assessment give students meaningful problems? Do the students gain worthwhile educational experiences? To find out if the assessment is meaningful, analyze the performance tasks and ask students and teachers what they think of them. Finding out how students and teachers perceive and react to the tasks and the assessment provides valuable, systematic information on how meaningful they are.

Cost and efficiency—The standard multiple-choice test is appealing when time and money are limited. Generally, performance-based assessments are more time-consuming and costly, especially for large-scale testing. Can you justify the cost of these more labor-intensive assessments? To keep costs down, the data collection techniques and scoring procedures need to be as efficient as possible.

So Where Do We Start?

Teachers who want to implement performance-based assessments may feel most comfortable doing so on a small scale, perhaps with one unit or one class. The steps are clear, and there are numerous helpful resources available (see the Resource Organizations and Reading Lists on pp. 26 and 21). Two particularly useful publications are *A Practical Guide to Alternative Assessment* by Joan L. Herman, Pamela R. Aschbacher, and Lynn Winters (available from the Association for

Supervision and Curriculum Development; (703) 549–9110) and the National Education Goals Panel's *Handbook for Local Goals Reports* (Publication Number 93–01; (202) 632–0952).

The basic steps in designing an integrated performance assessment system include identifying desired goals and objectives, establishing standards, identifying resources, designing and implementing instruction, designing assessment tasks, designing scoring methods, and identifying follow-up steps. Table 4 suggests questions to consider at each stage.

Teachers who have begun to use alternative assessment in their classrooms are good sources for ideas and guidance. The following recommendations are from *Alternative Assessments in Math and Science: Moving Toward a Moving Target* by Appalachia Educational Laboratory and Virginia Education Association, 1992. They were made by teachers in Virginia after they spent 6 months developing and implementing alternative assessment activities in their classrooms. (See "One School Experiments with Performance-Based Assessments" on p. 13 for more ideas from teachers.)

1. Start small. Follow someone else's example in the beginning, or do one activity in combination with a traditional test.

2. Develop clear rubrics. Realize that developing an effective rubric (rating scale with several categories) for judging student products and performances is harder than carrying out the activity. Standards and expectations must be clear. Benchmarks for levels of performance are essential. Characteristics of typical student products and performances may be used to generate performance assessment rubrics and standards for the class.

3. Expect to use more time at first. Developing and evaluating alternative assessments and their rubrics requires additional time until you and your students become comfortable with the method.

Table 4. Designing Performance-Based Assessments

Step	*Issues*
Identify desired goals and objectives.	What knowledge and skills should students have at the end of the unit or class? Should they be able to write a persuasive paper? Develop and test a hypothesis? Read a map?
Establish standards.	At what level should students perform? Should they be able to use supporting examples and statistics in an argument? Work with three variables? Calculate distance with 90-percent accuracy?
Identify resources.	What people, sites, books, films, equipment, maps, manipulatives, or other learning materials are available to support teaching and learning?
Design and implement instruction.	How can teachers and students use the resources to achieve the learning objectives? What strategies will motivate and actively involve students? What alternative approaches might be used to reach all children? Remember that instructional plans can and should be adapted to meet changing circumstances.
Design assessment tasks.	What products or processes will illustrate what students have learned? A classroom demonstration? A presentation to parents and teachers? A portfolio?
Design scoring methods.	How will the performance-based assessments be judged? What constitutes outstanding or acceptable results? Is there a rating scale that shows how points or grades will be assigned?
Identify next steps.	How will teachers and students respond to different scores? What will students do to improve performance weaknesses? How might instruction be adapted to improve outcomes?

4. Adapt existing curriculum. Plan assessment as you plan instruction, not as an afterthought.

5. Have a partner. Sharing ideas and experiences with a colleague is beneficial to teachers and to students.

6. Make a collection. Look for examples of alternative assessments or activities that could be modified for your students and keep a file readily accessible. (See the following references for sample items: Educational Testing Service, 1993; Appalachia Educational Laboratory and Virginia Education Association, 1992; and ERIC Clearinghouse on Assessment and Evaluation, in progress.)

7. Assign a high value (grade) to the assessment. Students need to see the experience as being important and worth their time. Make expectations clear in advance.

8. Expect to learn by trial and error. Be willing to take risks and learn from

mistakes, just as we expect students to do. The best assessments are developed over time and with repeated use.

9. Try peer assessment activities. Relieve yourself of some grading responsibilities and increase student evaluation skills and accountability by involving them in administering assessments.

10. Don't give up. If the first tries are not as successful as you had hoped, remember, this is new to the students, too. They can help you refine the process. Once you have tried an alternative assessment, reflect and evaluate the activities. Ask yourself some questions. What worked? What needs modification? What would I do *differently*? Would I use this activity again? How did the students respond? Did the end results justify the time spent? Did students learn from the activity?

Recommendations for Administrators

Administrators, too, face many challenges when alternative assessment is implemented. These recommendations for principals and superintendents are drawn from several sources.

1. Allow teachers to incorporate the practices of authentic assessment in their classrooms. Teachers and administrators need to work creatively with established policies and standard operating procedures in order to support and encourage changes in the art, practice, and profession of teaching and assessing students. Teachers need to be given opportunities and encouragement to engage in and experiment with authentic assessment practices in their classrooms (Zessoules and Gardner, 1991).

2. Find ways to support teachers as reflective professionals working together to confront the issues at the heart of authentic assessment. Authentic assessment sets a context for evaluating students as active learners; at the same time, authentic assessment demands that teachers be viewed as professionals in the work of teaching and assessing. Teachers need to work and reflect collaboratively with their colleagues in order to better understand their experiences with changing instruction and assessment (Zessoules and Gardner, 1991).

3. Elicit support for alternative assessment from the widest possible audience. Changing assessment methods has implications for instruction and for school organization. Teachers and administrators who want to explore alternative ways to assess students need to maintain strong links with parents and the surrounding community. Find ways to inform and incorporate the concerns and enthusiasm of the community to enlist support and foster acceptance of new forms of assessment (Zessoules and Gardner, 1991).

"If we are to significantly improve achievement for all students, there must be changes in the level and quality of effort that students invest in their own learning."

4. Constantly identify resources. Assessment is only one of many steps in the instructional process. Review articles, books, commercial products, materials from national task forces, and other materials dealing with curriculum, instruction, and assessment. Bring these materials to the attention of teachers, parents, and other resource personnel involved in instruction.

5. Keep the emphasis on the student as an active learner. Reforms implemented over the past 30 years have shown that, by themselves, neither better instruction nor higher standards truly motivate students, improve school quality, and lead to more learning. If we are to significantly improve achievement for all students, there must be changes in the level and quality of effort that students invest in their own learning. Examine your school's reward systems, structures, and environment to ensure that expectations are genuine and are communicated well. Allowing students to evade difficult tasks, grading according to sliding criteria, and offering too many non-challenging electives, for example, will be counterproductive to high-quality learning (Tomlinson and Cross, 1991).

6. Keep accountability separate from individual assessment. While the same types of items can be used for both accountability and individual assessment functions, do not attempt to use the same instruments for both purposes. Performance-based assessments are subject to the same pressures and political realities as any other tests (see Goslin, 1963 on the New York State Regents Examination; Haney, Madaus, and Lyons, 1993 for a measurement perspective; and Murphy and Schiller, 1992 for an administrator's perspective). If you want to use a test for accountability, consider using random samples of students and items rather than testing everyone. Sampling will often provide the same information at a much lower political and financial cost.

Summary

Performance-based assessments that are aligned with a challenging curriculum have great potential to revitalize teaching and learning at the classroom level. Although there are legitimate concerns about using them (or standardized tests, for that matter) for high-stakes purposes, there is little doubt they may also serve as accountability measures someday. We encourage teachers and administrators to begin exploring performance assessments both as a diagnostic tool to illuminate what their students know and can do, and as a method to more fully engage students in their own learning. Creating and using performance-based assessments rather than relying on textbook tests empowers teachers and students to undertake genuine learning.

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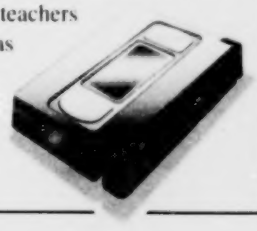
Lab, Center Offer Videos on Assessment

The Northwest Regional Educational Laboratory (NWREL) in Portland, OR, has developed a 14-module, 45-hour introductory video series on classroom assessment. Topics include helping teachers integrate teaching and testing; writing good items for paper-and-pencil tests; measuring thinking; assessing reading, writing, mathematics, and science; using sound grading practices; understanding standardized tests; and using portfolios. Each video workshop averages 3 hours in length and costs $125. To learn more about classroom assessment training, contact NWREL at 1–800–547–6339. To order videotapes, contact IOX, 5301 Beethoven Street, Suite 109, Los Angeles, CA 90066–7061; (310) 822–3275.

The National Center for Research on Evaluation, Standards, and Student Testing has produced a 10-minute videotape called "Portfolio Assessment and High Technology" for school districts, principals, and teachers interested in building portfolio programs. Issues such as developing standards for portfolios, selecting pieces, and involving parents in the portfolio process are covered. The tape is $10. To order, contact UCLA/CRESST, 405 Hilgard Avenue, Los Angeles, CA 90024–1522; (310) 206–1532.



One School Experiments with Performance-Based Assessments

According to Nancy Haas, an assistant principal at Holt High School, the lay public measures the success of education almost solely by test scores. Test scores tell the public whether students, as a whole, are succeeding or failing. But they don't necessarily tell the whole story or help teachers figure out how to reach individual students more effectively.

"A sound assessment policy would take into account the diverse needs of our student population, as well as the diverse nature of the teaching and learning process," said Ms. Haas. "Assessment would become a yardstick along the way used to determine student progress through school experience."

Under Ms. Haas's leadership, the teachers at the 975-student Holt High School, which is located in Holt, Michigan, a largely middle-class community outside of East Lansing, have attempted to develop some additional ways to measure learning. Teamwork, communication skills, problem solving, writing, thinking, speaking, listening, and understanding the conceptual nature of science and math are all part of this new assessment. Performances, panels, journals, and interviews complement the traditional testing methods used at Holt.

Students Demonstrate Problem Solving to Judges

In Michael Lehman's Algebra II classes, for example, students prepare for their final exams by working on complex real-world problems in groups and alone. On the day of the exam, students are asked to explain their methods and results before a panel of judges, who score them on their understanding of the problem and concepts, their ability to communicate, and their contributions to the group. This method of assessment enables Mr. Lehman and his students to see how indepth their understanding of mathematics really is and to sort out which mistakes arise from misunderstandings about a concept and which from computational errors. Many students also enjoy demonstrating what they know to the judges. "The kind of information I receive about each student and the students' reactions make it clear that this is a much better method of assessing understanding than typical paper-and-pencil tests," said Mr. Lehman.

Seeing the results of the initial performance-based assessments has changed the way Mr. Lehman teaches. He now focuses more on helping students learn concepts and apply mathematics in real-world settings. He has also increased the number of assessments to four each year and developed a variation of the assessment for precalculus students.

Such innovation has not been without challenges. Mr. Lehman reports having to ask hard questions about his instruction, the curriculum, and the general conditions of learning high school mathematics: "Since the problems require students to think about something, they should reflect something worthwhile to wonder about. How does a classroom teacher create problems that fit this requirement around each issue discussed in the curriculum?"

Identifying and setting up panels of judges also requires additional work. Although Holt High School, a professional development school associated with Michigan State University, can draw on university personnel who work in the school, other schools may not have access to such experts.

Portfolios Show Growth in Student Learning

Another type of performance-based assessment used at Holt is the portfolio. Dorothy Anderson, an art teacher, has been using portfolios in her classroom for several years to track student development through a unit, semester, or year. Students also keep journals to reflect on their progress. "I used to teach art with the focus upon the end product," she said, "and I questioned whether or not my students actually understood or were merely following my instructions. It is important for students to understand their transformation as opposed to just coming up with a teacher-guided product."

Two business education teachers, Anne Kressler and Margo Strong, are exploring portfolios in a word processing course. Their students will complete a desktop publishing project to show they can use and apply all the functions of the software.

Essays Hone Critical Thinking and Writing Abilities

At Holt, essays are not the province of the English classes alone. Students in social studies and science courses also demonstrate their understanding of subjects through essay assessment. In a global studies course, for example, seniors learn to analyze articles and studies for accuracy and logic and then demonstrate their critical-thinking proficiency by developing a study of a global problem.

Through essay tests, science teacher Larry Burgess asks students to tackle such issues as how plants make food and how the energy in water behind a dam could be converted to the energy in a marshmallow. He recommends challenging students to solve real-world problems, using a range of questions (for example, questions that require students to describe processes, demonstrate knowledge, and make predictions), and including open-ended questions to give students opportunities to construct their own answers.

An advantage of such essays, said Mr. Burgess, is that teachers can individualize their assessments. A high-ability student would be encouraged to answer a question about how plants make food in great detail, while a lower ability student might receive credit for writing, "Plants use water, carbon dioxide, and the sun to make sugar and oxygen."

> ***"Students in social studies and science courses also demonstrate their understanding of subjects through essay assessment."***

Students with limited writing ability might supplement their written work with an interview with the teacher.

"Good essay tests ask students to use their own intellect, imagination, organizational skills, and problem-solving skills," said Mr. Burgess. "They can be a reliable and accurate method of determining student knowledge," particularly when coupled with interviews.

Performance Plus

Holt High School's evolution toward using more alternative assessments began 4 years ago, when the school schedule was restructured to give teachers collaborative planning time for a full morning each week. Students now have five 60-minute periods every day except Wednesday, when their teachers meet in the morning and they have three classes in the afternoon.

The agenda for Wednesday mornings? "No business as usual," said Assistant Principal Nancy Haas. "No individual planning. No making copies." The collaborative planning time has provided the forum to encourage teachers to experiment with alternative assessment and other innovations. Until the Wednesday morning sessions began, noted Ms. Haas, "Many teachers didn't know what their colleagues did. Now they share innovations and struggles."

According to Ms. Haas, interest in assessment "evolved through the ranks," helped by a supportive relationship between faculty at Holt and faculty at the teachers college of Michigan State University. Holt High School has also received additional funding for assessment innovations through state competitive grants. Now elementary schools that feed into the high school are starting to express interest in changing their assessment methods to better prepare their students.

The 57 teachers at the high school are encouraged to share their experiences by assuming leadership roles in state-level committees and professional organizations. Parents, too, have become advocates for alternative assessment, particularly if they have been involved as judges and panel members.

The faculty at Holt High School don't believe that standardized tests will disappear, but they do believe performance-based assessments add an extra dimension to their understanding of students. "We know that the test score will never go away," said Ms. Haas, "but the test score can be greatly enhanced with a full understanding and appreciation of the many other ways to determine student learning."

Holt High School faculty members discuss their assessment practices in *Alternative Assessment: Emerging Theories and Practices at Holt High School*, Bruce Kutney, ed. Copies of the publication are available for $12 from Holt High School, 1784 Aurelius Road, Holt, MI 48842; Attn: Nancy Haas.

Carol Boston
ACCESS ERIC

U.S. Department of Education Funds Standards Groups

The U.S. Department of Education's Office of Educational Research and Improvement (OERI) is funding the development of voluntary national content and performance standards in several subject areas. *Content standards* state what students should know and be able to do. *Performance standards* state how well a student should demonstrate knowledge and skills.

Establishing clear standards raises expectations and lets everyone in the education system know what to aim for. Teachers, students, and parents need to know what is expected for success. Clear standards for excellence allow every student, parent, and teacher to judge whether students have measured up to well-defined and widely accepted standards.

Voluntary national standards in science, history, the arts, civics and government, geography, English language arts, and foreign languages will provide benchmarks that state and local school districts can use for guidance as they develop their own curricula. The first of these standards will be ready for the 1994–95 school year. Mathematics standards, developed independently by the National Council of Teachers of Mathematics, are already available.

The standards will be voluntary, not mandatory. States and local districts will develop practical methods that reflect local needs to enable students, with the help of parents, teachers, and administrators, to reach these standards. They will develop curriculum frameworks that will guide the selection of classroom materials and lessons. OERI has given grants to 23 states to develop such curriculum frameworks in various subject areas.

The following major professional and scholarly organizations have received OERI funding to develop voluntary national standards in particular subjects. Each of these standard-setting projects will manage a broad consensus-building process. In every field, many teachers, scholars, administrators, parents, and other members of the public will participate in shaping the national standards.

To find out more about standards in the various subject areas, write to the projects listed below and ask for information. The finished standards for mathematics and the arts are already available.

Mathematics

To order *Curriculum and Evaluation Standards for School Mathematics*, contact:

The National Council of Teachers of Mathematics
Order Processing
1906 Association Drive
Reston, VA 22091
(703) 620–9840
Item number: 398E1
ISBN 0–87353–273–2
Cost: $25 each (discounts for bulk orders)

Science

National Academy of Sciences
National Research Council
2101 Constitution Avenue NW
Washington, DC 20418
(202) 334–1399

History

National Center for History in the Schools
University of California at Los Angeles
10880 Wilshire Boulevard, Suite 1610
Los Angeles, CA 90024

Arts

Music Educators National Conference
1902 Association Drive
Reston, VA 22091

In coordination with the American Alliance for Theatre and Education, the National Art Education Association, and the National Dance Association

Civics

Center for Civic Education
5146 Douglas Fir Road
Calabasas, CA 91302–1467

Geography

National Council for Geographic Education
1600 M Street NW, Suite 4200
Washington, DC 20036
(202) 775–7832

In coordination with the Association of American Geographers, the National Geographic Society, and the American Geographical Society

English

The Center for the Study of Reading
174 Children's Research Center
51 Gerty Drive
Champaign, IL 61820

In coordination with the National Council of Teachers of English and the International Reading Association

Foreign Language

The American Council on the Teaching of Foreign Languages
6 Executive Plaza
Yonkers, NY 10701–6801

The above standards-setting projects have received funding from the U.S. Department of Education. Three other projects are being funded primarily by associations:

Economics

National Council on Economic Education
432 Park Avenue South
New York, NY 10016

Physical Education

National Association for Sport and Physical Education
1900 Association Drive
Reston, VA 22091
(703) 476–3461

Social Studies

National Task Force for Social Studies Standards
National Council for the Social Studies
3501 Newark Street NW
Washington, DC 20016–3167

Curriculum, Teaching, and Assessment Standards: The National Council of Teachers of Mathematics

The search for curriculum standards—consensus on what students should know and be able to do—is now underway in almost every academic subject. The National Council of Teachers of Mathematics (NCTM), which began developing curriculum standards in 1986, is widely recognized as a pioneer in this effort. NCTM's groundbreaking work on standards supports major reforms in teaching and learning, including assessment methods. By reviewing NCTM's process, we can see the importance of aligning curriculum and assessment.

Developing Curriculum Standards

In the aftermath of two major national meetings in 1983 on the status of mathematics education, NCTM established a commission to develop mathematics curriculum standards for grades K–4, 5–8, and 9–12 and to consider evaluation issues. The commission included classroom teachers and supervisors, mathematics educators, and mathematicians. Prior to developing their draft, commission members reviewed mathematics research; state curriculum documents from California, Oregon, and Wisconsin; and curriculum materials from Australia, the Netherlands, Japan, and the United Kingdom. By mid-1987, the commission was ready to go public: 10,000 copies of the draft of *Curriculum and Evaluation Standards for School Mathematics* were sent to members of the National Council for Teachers of Mathematics, the Mathematical Sciences Education Board, and other professional mathematics organizations for review and comment. After revision, additional review, and editing, the *Standards* were published in 1989. In 1991, NCTM published a companion document, *Professional Standards for Teaching Mathematics*, which offers a vision of an instructional environment and pedagogy.

Working for Change on the Classroom Level

The *Curriculum Standards* stress that "all students need to learn more, and often different, mathematics" and state explicitly that "instruction in mathematics must be significantly revised" (NCTM, 1989, p. 1). Every student is seen as capable of developing "mathematical power," entailing problem solving, reasoning, communication, and real-world applications. According to the *Standards*, **what** students learn is closely linked to **how** they learn it; therefore, classrooms must become places of real investigation, problem solving, discussion, and reflection.

The *Standards* describe content that all students should master in the elementary, middle-level, and secondary years. Several states, including California and Texas, have developed frameworks for K–12 mathematics education based on them. Given the high level of interest in the *Standards*, textbook and test publishers are working to develop related materials and instruments.

The *Professional Teaching Standards* emphasize that teachers are responsible for selecting tasks that will help students achieve education goals. Teachers need to maintain a stimulating environment and continually assess how students are learning in order to make instructional decisions. While they need considerable autonomy to teach well, they should not be isolated. Teachers need to collaborate, plan together, and observe each other in order to be effective.

Developing Assessment Standards

Assessment is the process of gathering evidence about a student's knowledge of, ability to use, and disposition toward mathematics and of making inferences based on that evidence for various educational purposes. Assessment includes observations, interviews, open-ended tasks, extended problem situations, and portfolios, as well as more traditional instruments.

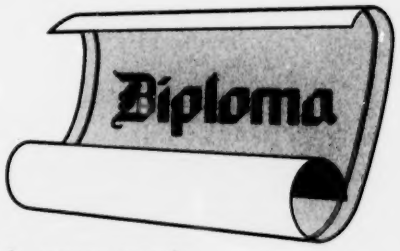
NCTM has developed draft standards for mathematics assessment that are consistent with the content and instructional techniques already put forth. In October 1993, the group released a draft copy of *Assessment Standards for School Mathematics*. Input on the draft is again being sought from educators. To receive a copy, contact:

Portia C. Elliott
National Council of Teachers
of Mathematics
1906 Association Drive
Reston, VA 22091
(703) 620–9840

A final document should be available during the 1994–95 academic year.

Thomas A. Romberg
National Council of Teachers
of Mathematics

Standards, Assessments, and the National Education Goals



The National Education Goals are an acknowledgement that, as a nation, there is a tremendous gap between our educational aspirations and our achievements. Almost 90 percent of the American public, according to a recent Gallup Poll, rate a world-class education system as critical to the nation's future. More than 80 percent believe that local public schools should conform to national standards of achievement. And yet it is clear that we do not have a world-class system.

Only 14 percent of American eighth-graders can solve problems involving fractions, decimals, percentages, or simple algebra. A third of eighth-graders are unable to figure the cost of a meal from a menu. A third of 11th-graders cannot write a coherent paragraph about themselves.

In response to these realities, the President and the 50 state governors met at Charlottesville, Virginia, in the fall of 1989 and convened an Education Summit. Out of this historic event came an agreement among the participants to set education goals for the nation and to initiate a decade-long campaign to increase education achievement at all levels. At the center of this campaign are the six National Education Goals.

The Goals state that by the year 2000:

1. All children will start school ready to learn.
2. The high school graduation rate will increase to at least 90 percent.
3. American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.
4. U.S. students will be first in the world in science and mathematics achievements.
5. Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.
6. Every school in America will be free of drugs and violence and will offer a safe, disciplined environment conducive to learning.

Before the nation's progress toward these Goals can be directly determined, however, clear and challenging standards of achievement must be established on which to base any measures. This is especially critical for Goal 3 because it is the Goal that most directly affects the nation's school children. Setting these standards means that we must identify what is important for our children to learn and how well it should be learned. It does *not* mean, however, that a national curriculum will be established. Embracing national standards will be voluntary, and it will be up to districts, schools, and teachers to choose how to adapt their curriculum to help students meet the standards. National standards will not spell out every day's lessons for every academic course.

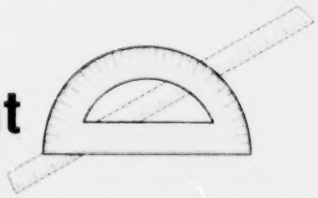
Setting goals, establishing high standards, and providing a clear direction for what we expect our children to know and be able to do at given grade levels will have a profound effect both on how teachers teach and on how they are trained. For the first time, schools of education can specify teaching techniques and their links to what every child should learn and how well at a given grade level. General teaching methods courses, with scattergun approaches and vague suggestions, will be replaced by more focused and relevant preservice and inservice teacher training.

Efforts are currently underway to develop standards in science, history, the arts, civics, geography, and English. There will be other subjects added to the mix as things move along. In the meantime, progress toward the Goals has been reported by the National Education Goals Panel through the best data currently available. These data are chosen on the basis of the theoretical or established relationship between their presence and desired educational effects.

The Goals reflect our best hope for the future. The National Education Goals Panel's work to date reflects the nation's and the states' commitment to be held accountable for the shape of the future and express the conviction that the Goals represent real targets, not just aspirations. If you would like more information about the National Education Goals Panel and its work, or suggestions on how your school district might measure its progress toward the six National Education Goals, call or write to the National Education Goals Panel, 1850 M Street, Suite 270, Washington, DC 20036; (202) 632–0952.

Edward Fuentes
Office of the Assistant Secretary, OERI
(Mr. Fuentes was previously on the professional staff of the National Education Goals Panel.)

Commercial Publishers and Performance-Based Assessment



As school districts and state departments of education become more interested in performance-based assessment, producers of standardized tests are broadening their line to include assessments that go beyond the familiar multiple-choice, fill-in-the-bubble tests. While such assessments will almost certainly be more costly than standardized tests to administer and score, and reliability and validity issues remain to be clarified, they could become an important part of the commercial testing mix in the next few years. Here's a sampling of the activities under way at some of the prominent test development companies.

Educational Testing Service
Rosedale Road
Princeton, NJ 08541
(609) 921–9000

Educational Testing Service (ETS) is well-known for administering standardized testing programs such as the Scholastic Aptitude Test (SAT) and the Graduate Record Exam (GRE). In recent years, ETS has begun to develop performance-based assessments in collaboration with Howard Gardner (Project Zero in the Pittsburgh schools) and Theodore Sizer's Coalition for Essential Schools. ETS also is spearheading the performance-based assessment section of the National Assessment for Educational Progress (NAEP), which now includes problem solving with calculators and manipulatives and open-ended written responses.

A revamped SAT (the acronym now stands for Scholastic Assessment Test) will be administered for the first time in March 1994. The new verbal section will include longer reading passages with additional questions that test verbal reasoning. The new mathematics section will include 10 questions that require students to solve problems and enter their answers on a grid, rather than selecting from multiple-choice options. Students will also be able to use calculators.

ETS is also developing a new series of teacher licensing assessments with a performance-based component. The Praxis Series will include in-class assessment of teaching performance, written documentation, and pre- and post-observation interviews carried out by trained local assessors.

American College Testing Program (ACT)
Educational Services Division
2201 Dodge Street
P.O. Box 168
Iowa City, IA 52243–0168
(319) 337–1036

ACT is recognized for career and educational assessment, including the ACT College Admissions Test. ACT is marketing an Educational Planning and Assessment System (EPAS) that is designed to help teachers and students measure students' progress toward attaining higher-level thinking skills from 8th to 12th grade. One component of EPAS is assessment for both the college-bound and those students entering the work force after high school graduation. Assessment methods include multiple-choice, performance-based methods, self-report inventories, and observation.

ACT is studying the feasibility of offering other performance assessments to augment traditional multiple-choice tests, including large-scale portfolio assessment on the secondary level. The technology of scoring such assessments—selecting and training readers and responding to a high volume of individual responses—presents a research challenge. ACT is also exploring using computers to create new item types. For example, a student might be asked to edit a passage on a computer screen. When he or she places the cursor on a problem spot, a window might open to show several alternatives. Such an item would combine free response and multiple-choice assessment.

The Psychological Corporation
Harcourt Brace Jovanovich
555 Academic Court
San Antonio, TX 78204–2498
1–800–228–0752

The Psychological Corporation, which offers the standardized Metropolitan Achievement Test and other statewide testing programs, has developed two performance-based assessments: GOALS and the Integrated Assessment System (IAS). GOALS uses a free-response format to assess reasoning ability in grades 1 to 12. Students are asked to generate and justify responses to open-ended questions, draw diagrams, complete charts, and edit text. Reading, language, mathematics, science, and social studies assessments are available. Teachers may hand score the assessments using a "holistic/analytic" scoring system that allows for differences in responses and partial credit for incomplete responses. Alternatively, the assessments may be centrally scored by The Psychological Corporation.

IAS is a free-response performance/portfolio assessment for students in grades 1 to 8. It measures thinking strategies students use to solve real-world problems in mathematics, science, and language arts (English or Spanish). Students are encouraged to use manipulatives and interact with their teachers during the assessment. The assessment yields both holistic scores, which offer an overall picture of how well a student solves problems, and an analytic score, which evaluates specific skills. It can be scored locally or at The Psychological Corporation.

Matthew Soska
ACCESS ERIC

Performance-Based Aspects of the National Assessment of Educational Progress (NAEP)

Background

The purpose of the National Assessment of Educational Progress (NAEP) is to monitor the educational progress of students in our national educational system—what they know and can do. Toward this goal, NAEP provides biennial information about student performance in key subject areas to educators and policymakers. Included is information about the academic performance of students in a given year and trends in performance across the years. To aid in interpreting these findings, NAEP collects information on students' background, learning activities, and the classroom instruction they receive. Because NAEP is not designed to diagnose the strengths and weaknesses of individual students' performance, such scores are not reported. Nor is NAEP designed to report school or school district results. Starting in 1990 and again in 1992, NAEP reported, on a trial basis, the performance of states. In 1990, 37 educational jurisdictions (states, territories, and Washington, D.C.) participated; 44 jurisdictions were participating by 1992.

Random samples of students, whose names are not collected, are selected to reflect the entire U.S. school population at grades 4, 8, and 12. Under this design, each individual participates for about an hour. Students take different versions of the test, enabling NAEP to cover a wide range of content and skills.

The NAEP test is developed through a national consensus process conducted through an independent National Assessment Governing Board (NAGB); therefore, it reflects many viewpoints in education. NAEP items and tasks are highly scrutinized prior to administration to students to eliminate racial, gender, and other biases.

Performance-Based Aspects of NAEP

NAEP has developed its instruments so students can display what they have learned through performance tasks, in addition to multiple-choice items. In 1994, approximately half of the assessment time across subject areas will be devoted to a variety of performance tasks. The word "performance" in this context implies a *direct* demonstration by students of what they can do, typically through open-ended response tasks. Multiple-choice tests, in contrast, tend to be indirect indicators of knowledge or skills. The following examples illustrate the kinds of performance tasks planned for assessment:

- **Example 1. Mathematics:** Students are required to work through an extended problem and explain their reasoning through writing and examples.
- **Example 2. Science:** Each student is given a kit of science equipment and asked to perform an investigation, make scientific observations, and evaluate experimental results.
- **Example 3. History:** Students analyze primary source documents and provide their analyses via written responses, going beyond memorization of facts.
- **Example 4. World Geography:** Students demonstrate geographic skills, including the ability to use an atlas, aerial photographs, and analytical concepts such as weather systems.

Authentic and culturally diverse materials are used for many of NAEP's performance tasks. For example, the NAEP reading assessment includes a selection of longer and naturally occurring reading materials, such as poems and articles, reproduced as they appeared in their original publications. Similarly, history tasks are based on primary source documents. Mathematics assessments require more use of calculators and manipulatives, such as geometric shapes, to provide students with concrete representations. Lastly, science performance tasks require working with scientific equipment.

Also new in the 1994 NAEP assessment is partial-credit scoring for open-ended response tasks. This enables NAEP to better describe the range of student abilities across differing item formats on a common scale.

The usefulness and credibility of NAEP depend on its ability to keep pace with current best practice and research in the field. For this reason, NAEP's framework objectives are updated with each conceptual change about education in a particular subject area. Also, a series of ongoing validity studies and independent evaluation studies provide the public and the testing profession with data on the technical integrity of NAEP.

Readers may obtain a copy of the *NAEP Guide* by writing to Dr. Sheida White, National Center of Education Statistics, 555 New Jersey Avenue, NW, Washington, DC 20208.

Gary W. Phillips
Sheida White
National Center for Education Statistics

News from the ERIC System

Get ERIC Information Through the Internet

The Educational Resources Information Center now offers education resources via the Internet, the worldwide computer network. If you have access to the Internet, you can e-mail any question about education or child development to: **askeric@ericir.syr.edu.**

The hallmark of AskERIC is the personal assistance of an ERIC staff member who interacts with the information seeker and selects and delivers information resources within 48 working hours. AskERIC staff use an array of resources, both from the ERIC system and from the Internet, to respond to information requests.

AskERIC, which is sponsored by the ERIC Clearinghouse on Information & Technology at Syracuse University, also maintains an FTP/Gopher site called the AskERIC Electronic Library. This file of resources includes lesson plans, Internet guides, searches on current topics, popular "Q's & A's," full-text ERIC Digests, and various education reference tools.

If you have Gopher, Gopher to ericir.syr.edu (port #70) or to gopher.micro.umn.edu, moving through the following directories: Other Gopher and Information Servers/ North America/USA/General/AskERIC (Educational Resources Information Center).

If you're interested in testing, Gopher to gopher.cua.edu under Special Resources. The ERIC Clearinghouse on Assessment and Evaluation at The Catholic University of America maintains a Gopher site that includes an alternative assessment database, the Educational Testing Service Test Collection database, and the Buros Test Review Locator.

ERIC Information Also Available Through Commercial Computer Networks

You can get the full text of various research summaries, brochures, articles, and directories produced by ERIC, along with some question-answering AskERIC services, through networks such as America Online, America Tomorrow, CompuServe, GTE, NEA Online, and SERVE-Line. Call 1-800-LET-ERIC for more information about what's available on the network you're using.

Clearinghouses Gain Toll-Free Numbers

The subject-specialty ERIC Clearinghouses now maintain toll-free telephone lines to better serve you. The ERIC Clearinghouses:

- acquire and process education literature for the ERIC database;
- answer questions and make referrals;
- offer search strategy consultation;
- develop and distribute free and low-cost publications;
- provide workshops and presentations; and
- work with related organizations.

Use the ERIC Directory located on the inside back cover to call a clearinghouse today!

The Center for Research on Evaluation, Standards, and Student Testing

How do we judge the quality of education? How do we determine what our students know and what they can do? What information should teachers, administrators, and policymakers have in order to make improvements in our educational system? How can we improve the kinds of measures we use so that assessment contributes to the well-being of individuals and organizations? The Center for Research on Evaluation, Standards, and Student Testing (CRESST), one of the 25 national research centers funded by the Office of Educational Research and Improvement, focuses on these essential questions.

CRESST is located at UCLA's Center for the Study of Evaluation, the lead institution for a team that includes the University of Colorado, the RAND Corporation, University of Chicago, University of California at Santa Barbara, University of Southern California, and University of Pittsburgh.

CRESST has five major goals:

- to provide leadership to improve assessment policy and practice at the national, state, and local levels;
- to improve the quality, sensitivity, and fairness of student performance assessments;
- to improve the validity of models and indicators for judging the quality of schools;
- to increase the understanding of assessment development, implementation, and effects as they occur in school practice; and
- to increase the understanding of assessment policy and its contribution to educational improvement.

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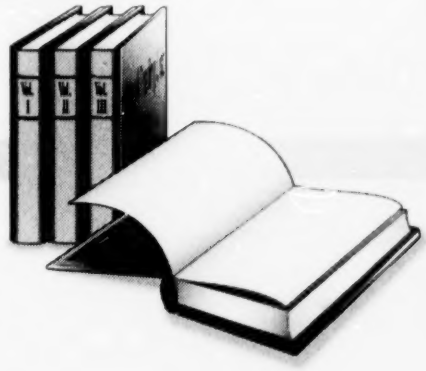

Alternative Assessment Reading List

The following titles cover a range of issues regarding assessment. Ordering information is included at the end of each entry. In addition, publications with an ED number have been abstracted and are in the ERIC database. You may read them on microfiche at more than 3,000 locations worldwide or order microfiche or paper copies from the ERIC Document Reproduction Service at 1–800–443–ERIC (3742). For details, contact ACCESS ERIC at 1–800–LET–ERIC (538–3742).

Accountability and Alternative Assessment
Joan Herman, 1992; ED 357 037

This report from the National Center for Research on Evaluation, Standards, and Student Testing summarizes research evidence supporting current beliefs in testing, identifies critical qualities of good assessments, and reviews the current state of research knowledge on producing such measures. $4 plus $1.50 postage and handling. UCLA/CRESST, 405 Hilgard Avenue, Los Angeles, CA 90024–1522; (310) 206–1532.

Alternative Assessment: Emerging Theories and Practices at Holt High School
Bruce Kutney, editor, 1993

This 82-page report includes nine chapters on how teachers at one high school are implementing alternative assessment. Examples and practical tips are included. $12. Holt High School, 1784 Aurelius Road, Holt, MI 48842.

Alternative Assessment of Performance in the Language Arts: What Are We Doing Now? Where Are We Going?
Phi Delta Kappa and the ERIC Clearinghouse on Reading, English, and Communication, 1991; ED 339 044

This 315-page book captures the proceedings of a national symposium on alternative assessment in the language arts. Session topics included whole language and evaluation, state policy and authentic writing assessment, and public attitudes and policy changes. $21.95 plus $3 postage. ERIC Clearinghouse on Reading, English, and Communication, Indiana University, 2805 East 10th Street, Suite 150, Bloomington, IN 47408–2698; 1–800–759–4723.

Alternative Assessments in Math and Science: Moving Toward a Moving Target
Appalachia Educational Laboratory and Virginia Education Association, 1992; ED 355 256

This 78-page study describes the experiences of 22 elementary, middle, and secondary school teachers in Virginia as they develop and implement alternative assessments in their classrooms. It offers general recommendations for practitioners as well as 22 sample alternative assessment activities with scoring rubrics. $9. Appalachia Educational Laboratory, Resource Center, P.O. Box 1348, Charleston, WV 24325.

Assessing Habits of Mind: Performance-Based Assessment in Science and Mathematics
M. Jorgensen, 1993

This handbook discusses the state of performance assessment in science and mathematics education and describes innovative forms and directions. $14.50 plus $3.50 shipping. ERIC Clearinghouse for Science, Mathematics, and Environmental Education, 1929 Kenny Road, Columbus, OH 43210–1080; (614) 292–6717.

Assessing Success in Family Literacy Projects
Daniel D. Holt, editor, 1993

This 120-page handbook describes how to develop and use alternative approaches to assessment and evaluation in family literacy projects. It emphasizes surveys, interviews, observation measures, and performance samples. $14.95 plus shipping. Delta Systems Co., Inc., 1400 Miller Parkway, McHenry, IL 60050–7030; 1–800–323–8270.

Assessment and Evaluation in Whole Language Programs
Bill Harp, editor; revised edition, 1993

This book offers a detailed examination of effective assessment and evaluation theory in current practice. It includes specific examples from primary, intermediate, bilingual, multicultural, and special education classrooms. $16.25. ERIC Clearinghouse on Reading, English, and Communication, Indiana University, 2805 East 10th Street, Suite 150, Bloomington, IN 47408–2698; 1–800–759–4723.

Assessment Issues from a Mathematics Education Perspective
Harold L. Schoen, 1993

This information bulletin addresses purposes and methods of mathematics assessment, with an emphasis on curriculum reform and large-scale assessment. $1.50. ERIC

(continued)

Alternative Assessment Reading List (continued)

Clearinghouse for Science, Mathematics, and Environmental Education, 1929 Kenny Road, Columbus, OH 43210–1080; (614) 292–6717.

Can Performance-Based Assessments Improve Urban Schooling?
Carol Ascher, 1990; ED 327 612

This ERIC Digest (No. 66) describes the potential of performance-based assessment to support a richer curriculum and to more accurately assess the skills of low-income minority students than standardized tests. Free with a stamped, self-addressed, business-sized envelope. ERIC Clearinghouse on Urban Education, Teachers College, Columbia University, Main Hall, Room 303, Box 40, 525 West 120th Street, New York, NY 10027–9998.

The Changing Face of Testing and Assessment: Problems and Solutions
Donald L. Hymes and others, 1991; ED 339 726

This 106-page report reviews the current state of testing and summarizes the issues and concerns surrounding test usage. The search for alternatives and the ways these alternative assessments are being used is also discussed. The report includes a summary of a survey involving 239 national school leaders. $14.95 plus $3.50 for postage and handling; discounts for multiple copies. American Association of School Administrators, 1801 North Moore Street, Arlington, VA 22209–9988.

"Complex, Performance-Based Assessment: Expectations and Validation Criteria"
Robert L. Linn, Eva L. Baker, and Stephen B. Dunbar, 1991

This important article from the November 1991 *Education Researcher* (Volume 20, Number 8, pp. 15–21) addresses validity issues surrounding performance-based assessment. The authors present a set of criteria by which to judge performance-based assessments, including consequences, fairness, transfer-generalizability, cognitive complexity, content quality, content coverage, meaningfulness, and cost efficiency. Check your library or order a reprint from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106–1346; 1–800–521–0600.

CRESST Performance Assessment Models: Assessing Content Area Explanations
Eva Baker, Pamela Aschbacher, David Niemi, and Edynn Sato, 1992

This handbook from the Center for Research on Evaluation, Standards, and Student Testing presents assessment models for secondary-level history and chemistry and specifications for duplicating the technique with other topics and subject matter areas. The processes for training raters, scoring the assessments, and reporting results are described. $10 plus $2.50 postage and handling. UCLA/CRESST, 405 Hilgard Avenue, Los Angeles, CA 90024–1522; (310) 206–1532.

"Educational Assessment: Expanded Expectations and Challenges"
Robert Linn, Spring 1993

This article in *Educational Evaluation and Policy Analysis* (Volume 15, Number 1, pp. 1–16) describes current national efforts to expand the role and nature of education assessments, discusses links between assessments and education reform, and presents validity issues related to performance-based assessment. Check your library or order a reprint from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106–1346; 1–800–521–0600.

ERIC Digests
ERIC Clearinghouse on Assessment and Evaluation

The ERIC Clearinghouse on Assessment and Evaluation (formerly Tests, Measurement, and Evaluation) developed a series of 2-page research syntheses on various topics related to performance assessment. Single copies of the following Digests are available free while supplies last:

"The Case for Authentic Assessment," Grant Wiggins, 1990, ED 328 611

"Authentic Mathematics Assessment," Tej Pandey, 1990, ED 354 245

"Authentic Reading Assessment," Peggy Dutcher, 1990, ED 328 607

"Authentic Writing Assessment," Carmen Chapman, 1990, ED 328 606

"Assessing Civics Education," Lawrence Rudner, 1991, ED 338 698

To order, send a self-addressed envelope to the ERIC Clearinghouse on Assessment and Evaluation, The Catholic University of America, 209 O'Boyle Hall, Washington, DC 20064–3893, or call (202) 319–5120.

Expanding Student Assessment
Vito Perrone, editor, 1991; ED 337 489

This 180-page book discusses the difficulties associated with current standardized testing and provides concrete directions for change. The 10 chapters focus on authentic assessment in education, with an emphasis on teachers and classroom practice. $14.95; ASCD Stock No.

Alternative Assessment Reading List (continued)

611–91114. Association for Supervision and Curriculum Development, 1250 North Pitt Street, Alexandria, VA 22314; (703) 549–9110.

"Facing the Challenges of a New Era of Educational Assessment"
Richard J. Stiggins, 1991

This article, from a special issue of *Applied Measurement in Education* on performance assessment (Volume 4, Number 4, pp. 263–73), outlines the challenges ahead for the assessment community in the areas of new assessment targets, technical challenges of alternative assessments, demystifying assessment and evaluation, and reexamining assessment priorities. Check your library or order a reprint from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106–1346; 1–800–521–0600.

From Gatekeeper to Gateway: Transforming Testing in America
National Commission on Testing and Public Policy, 1990; ED 333 004

This report summarizes findings of the National Commission on Testing and Public Policy regarding the use of testing in educational and employment situations. Based on expert testimony, a literature review, and five public hearings, the Commission concluded that multiple-choice testing is relied upon too heavily, often lacks public accountability, and can deflect attention from educational problems. The Commission makes eight recommendations for improving testing and describes a vision of testing as an instrument to enhance the development of human talent. $6 for the report; the Executive Summary is free. McGuinn Hall, Room 531, Boston College, Chestnut Hill, MA 02167.

Handbook for Local Goals Reports: Building a Community of Learners
Laura Lancaster and Leslie Lawrence, editors, 1992; ED 349 634

This handbook is designed to help community leaders and citizens develop ways to measure their progress toward achieving the National Education Goals. It suggests a range of measures and indicators for each goal as well as resource organizations offering additional information. Free. The National Education Goals Panel, 1850 M Street, Suite 270, Washington, DC 20036; (202) 632–0952.

Implications for Diversity in Human Characteristics for Authentic Assessment
Edmund Gordon, 1991

This technical report (#341), delivered at the annual meeting of the American Educational Research Association, addresses key issues of validity and fairness as they relate to assessing members of diverse cultural groups. It includes nine recommendations for developing an equitable assessment system. $2 plus $1.50 postage and handling. UCLA/CRESST, 405 Hilgard Avenue, Los Angeles, CA 90024–1522; (310) 206–1532.

Improving Instruction and Learning Through Evaluation: Elementary School Science
Elizabeth Meng and Rodney Doran, 1993

This handbook provides ideas for and examples of assessments of science process skills, concepts, and problem solving among elementary school students. Guidelines for developing your own assessment instrument and using the information gathered are also included. $14.50 plus $3.50 shipping. ERIC Clearinghouse for Science, Mathematics, and Environmental Education, 1929 Kenny Road, Columbus, OH 43210–1080; (614) 292–6717.

It Belongs To Me: A Guide to Portfolio Assessment in Adult Education Programs
Hanna Arlene Fingeret, Literacy South, 1993

This 69-page guide introduces adult literacy educators to the concept of portfolio assessment. Free with a written request that includes a self-addressed mailing label. Clearinghouse, Division of Adult Education and Literacy, U.S. Department of Education, Washington, DC 20202–7240.

Learner Assessment in Adult ESL Literacy
Heide Spruck Wrigley, 1992; ED 353 863

This "ERIC Q & A" from the National Clearinghouse on Literacy Education addresses the role of standardized tests in assessing adult English as a Second Language (ESL) literacy and describes promising alternative assessment approaches. Free. Center for Applied Linguistics, 1118 22nd Street NW, Washington, DC 20037; (202) 429–9292.

Alternative Assessment Reading List (continued)

Mathematics Assessment: Myths, Models, Good Questions, and Practical Suggestions
Jean Kerr Stenmark, editor, 1991; ED 345 943

This 65-page book provides a collection of assessment techniques that focus on student thinking and are consistent with the National Council of Teachers of Mathematics' *Curriculum and Evaluation Standards for School Mathematics*. Developing an assessment plan, using a variety of performance-based techniques, and documenting and reporting results are covered. $8.50. NCTM, 1906 Association Drive, Reston, VA 22091; (703) 620–9840.

Measuring Up: Prototypes for Mathematics Assessment
Mathematical Sciences Education Board, 1993

The most recent volume in the *Perspectives on School Mathematics* series, this 160-page report illustrates a set of principles that can be used to create mathematics assessment activities for any grade level. A collection of 13 prototype assessment activities and a listing of contacts for the mathematics education state coalitions are included. $10.95 plus $4 handling fee. National Academy Press, 2101 Constitution Avenue NW, Washington, DC 20418; 1–800–624–6242.

Measuring What Counts: A Conceptual Guide for Mathematics Assessment
Mathematical Sciences Education Board, 1993

This volume, a companion to *Measuring Up*, is a guide for educators who want to develop effective assessments. It addresses equity, content appropriateness, and the teaching and learning implications of mathematics assessment. $14.95 for the full report; $3.95 for the policy brief. National Academy Press, 2101 Constitution Avenue NW, Washington, DC 20418; 1–800–624–6242.

Performance and Portfolio Assessment for Language Minority Students
Lorraine Valdez Pierce and J. Michael O'Malley, 1992; ED 346 747

This Program Information Guide (#9) describes performance assessment procedures and a portfolio assessment framework for monitoring the language development of language minority students in the upper elementary and middle grades. $3.50. National Clearinghouse for Bilingual Education, 1118 22nd Street NW, Washington, DC 20037.

Performance-Based Assessment and What Teachers Need
Charlotte Higuchi, 1993

This technical report (#362) from the Center for the Study of Evaluation helps school districts determine what resources must be provided in order to support classroom teachers in using performance assessments in the classroom. Both physical and organizational requirements are addressed. $4 plus $1.50 postage and handling. UCLA/CRESST, Graduate School of Education, 405 Hilgard Avenue, Los Angeles, CA 90024–1522; (310) 206–1532.

The Portfolio and Its Use: Developmentally Appropriate Assessment of Young Children
Cathy Grace, 1992; ED 351 150

This ERIC Digest defines portfolio assessment, introduces a variety of portfolio components, and discusses how to use portfolios to evaluate young children. Free. ERIC Clearinghouse on Elementary and Early Childhood Education, University of Illinois, 805 West Pennsylvania Avenue, Urbana, IL 61801; 1–800–583–4135.

Portfolio Assessment in Adult, Career, and Vocational Education
ERIC Clearinghouse on Adult, Career, and Vocational Education, 1993; ED 354 385

This Trends and Issues Alert describes portfolio assessment as a tool to encourage learners to assess their own progress. It discusses what it takes to implement portfolio assessment and provides an annotated list of 20 print resources. Free. ERIC Clearinghouse on Adult, Career, and Vocational Education, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210–1090; 1–800–848–4815.

Portfolio News
Winfield Cooper, editor

This quarterly newsletter, published by the Portfolio Assessment Clearinghouse, covers portfolio use in settings ranging from kindergartens to universities. $25/year. c/o Teacher Education Program, University of California at San Diego, 9500 Gilman Drive, La Jolla, CA 92093–0070.

Portfolios: Assessment in Language Arts
Roger Farr, 1991; ED 334 603

This ERIC Digest (EDO–PS–92–11) provides readers with an overview of the language arts portfolio.

Alternative Assessment Reading List (continued)

emphasizing the integration of language arts goals and new instructional approaches. $1. ERIC Clearinghouse on Reading, English, and Communication, Indiana University, 2805 East 10th Street, Suite 150, Bloomington, IN 47408–2698; 1–800–759–4723.

A Practical Guide to Alternative Assessment
Joan L. Herman, Pamela R. Aschbacher, and Lynn Winters, 1992; ED 352 389

This 121-page guide, written for preservice and practicing teachers, school administrators, and supervisors, offers guidance on developing and using alternative measures of student achievement. The authors provide a process model linking assessment with curriculum, instruction, and learning. Chapters address rethinking assessment, determining purpose, selecting assessment tasks, setting criteria, ensuring reliable scoring, and using alternative assessment for decision making. $10.95. Association for Supervision and Curriculum Development, 1250 Pitt Street, Alexandria, VA 22314; (703) 549–9110.

Raising Standards for American Education
National Council on Education Standards and Testing, 1992; ED 338 721

This report from the National Council on Education Standards and Testing discusses the need for high national education standards and a voluntary linked system of assessments in order to raise expectations, revitalize instruction, and rejuvenate education reform efforts for American schools and students. U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402–9328.

Science Assessment in the Service of Reform
Gerald Kulm and Shirley Malcolm, editors, 1991; ED 342 652

This compilation treats policy issues, the relationship between science assessment and curriculum reform, and the relationship between science assessment and instruction. It includes several practical examples from the field. $24.95 plus $4 postage and handling. American Association for the Advancement of Science Books, P.O. Box 753, Waldorf, MD 20604; (301) 645–5643.

A Survey of More Authentic Assessment Practices
Joe B. Hansen and Walter E. Hathaway, 1993

This book describes a conceptual framework for classifying authentic assessment efforts based on purpose, scale, response type, content area, and academic level. It includes case studies of authentic assessment programs in various stages of development and use in public school districts and state departments of education. $15. ERIC Clearinghouse on Assessment and Evaluation, The Catholic University of America, 210 O'Boyle Hall, Washington, DC 20064; (202) 319–5120.

Toward One System of Education: Assessing To Improve, Not Merely Audit. State Policy and Assessment in Higher Education.
Grant Wiggins, 1991; ED 348 400

This 41-page report introduces a performance-based accreditation process for schools and colleges, with policies to promote local work, chart progress over time, and give incentives for meeting high performance standards. Appendices include scoring scales for writing activities, and "work requirements" in literature study and chemistry. $6 plus postage and handling; Order No. PA–91–2. Distribution Center, Education Commission of the States, 707 17th Street, Suite 2700, Denver, CO 80202–3427.

Using Portfolios To Assess Student Performance
Joan McRobbie, 1992; ED 351 378

This Knowledge Brief (No. 9) discusses the value of portfolios as an assessment tool and offers steps for designing and scoring them. $3. Far West Laboratory for Educational Research and Development, 730 Harrison Street, San Francisco, CA 94107–1242; (415) 565–3000.

American Association for Higher Education Assessment Forum

This organization, sponsored by the U.S. Department of Education's Fund for the Improvement of Postsecondary Education, works to improve higher education assessment practices and assist colleges in using assessment techniques to improve student learning. It provides information on recently developed assessment techniques and commissioned papers on higher education assessment. The Assessment Forum also offers consulting and networking services. One Dupont Circle NW, Suite 360, Washington, DC 20036; (202) 293–6440.

Arts PROPEL Project

This project, run by a consortium of the Pittsburgh Public Schools, Educational Testing Service, and Project Zero of the Harvard Graduate School of Education, demonstrates the use and reliable scoring of writing portfolios in English classes in 24 schools. Connelly Institute, Office of School Support Services, 1501 Bedford Avenue, Pittsburgh, PA 15219; FAX (412) 338–8115.

Association for Measurement and Evaluation in Counseling and Development (AMECD)

This division of the American Association for Counseling and Development serves individuals who plan, administer, and conduct testing programs and score and interpret test results. AMECD reports research findings and test reviews in a membership newsletter and a quarterly journal, *Measurement and Evaluation in Counseling and Development*. 5999 Stevenson Avenue, Alexandria, VA 22304; (703) 823–9800.

Association for Supervision and Curriculum Development (ASCD) Network on Authentic Assessment

ASCD sponsors special interest groups called networks to help curriculum developers and supervisors exchange ideas, solve problems, and work collaboratively on issues of mutual concern. Various networks offer newsletters, computer bulletin boards, and workshops. The network on authentic assessment is faciliated by Kathleen Busick, Pacific Educational Laboratory, Suite 1409, 1164 Bishop Street, Honolulu, HI 96812; (808) 532–1900.

Buros Institute of Mental Measurement

The Institute works to advance the science of testing and measurement by providing professional assistance and information to users of commercially published tests and assessment products. It promotes appropriate test selection and encourages improved test development through critical analysis of measurement instruments. Buros Institute publishes the *Mental Measurement Yearbook*, which describes and analyzes recently released tests, and also maintains a comprehensive test collection and library. 135 Bancroft Hall, Lincoln, NE 68588–0348; (402) 472–6203.

Clearinghouse for Higher Education Assessment Instruments

This clearinghouse is funded by the U.S. Department of Education's Fund for the Improvement of Postsecondary Education to gather information on standardized and faculty-developed instruments and methods to assess the outcomes of higher education. The clearinghouse provides collections of assessment instruments on student services/student development, institutional effectiveness, basic skills and general education, affective assessment, portfolio assessment, and assessment instruments in the various majors offered to students. It is developing a catalog that describes the reliability, validity, and use of selected instruments as well as a set of specifications for developing and evaluating assessment instruments and methods in general. University of Tennessee at Knoxville, 212 Claxton Education Building, Knoxville,TN 37996–3400; (615) 974–3748.

The Council of Chief State School Officers State Education Assessment Center

The Council established the State Education Assessment Center to improve the quality and comparability of data on education, including state-by-state achievement data, indicators of quality in such areas as math and science, and performance assessment of teachers and students. The Center is collaborating with state education agencies, the federal government, and national and international organizations to build consensus around key indicators of educational progress, such as comparative achievement data. One project, the State Collaborative on Assessment and Student Standards (SCASS), is designed to help member states improve the quality of student assessments that are being developed and reduce the costs and time required to develop them. Under SCASS, state curriculum and assessment specialists and content experts have met to develop frameworks and exercises in various content areas, and a multistate consortia has been established to assist in the development of joint standards and assessments of student performance and tests for teacher certification. The Council serves as the U.S. representative to the General Assembly of the International Association for the Evaluation of Educational Achievement and has conducted several projects to determine the content and objectives of the National Assessment of Educational Progress. NAEP projects have been conducted in mathematics, reading, science, geography, and history; a project on the arts is now underway. One Massachusetts Avenue NW, Suite 700, Washington, DC 20001–1431; (202) 408–5505.

Educational Testing Service (ETS)

ETS designs, develops, and administers tests on the secondary, postsecondary, and professional levels. The federally funded National Assessment of Educational Progress project is based at ETS. In addition, ETS administers the College Board's Advanced Placement Program examinations, as well as the Scholastic Assessment Test and the

Graduate Record Exam. ETS is beginning to market The Praxis Series: Professional Assessments for Beginning Teachers, which will replace the National Teachers Exam. Once known primarily for standardized tests, ETS's latest assessments have performance-based aspects. Many also are being adapted for computer use. ETS maintains an extensive collection of current and out-of-print tests. Write for a free catalog. Rosedale Road, Princeton, NJ 08541; (609) 921–9000.

ERIC Clearinghouse on Assessment and Evaluation

This clearinghouse, 1 of 16 within the U.S. Department of Education's Educational Resources Information Center (ERIC) system, acquires, selects, and abstracts information on educational testing and evaluation, including measurement devices, research design, and methodology. In addition, the Clearinghouse produces information analysis products; disseminates complimentary ERIC products, such as Digests, newsletters, and brochures; and provides free reference and referral services and search strategy consultation. Individuals with access to the Internet may Gopher to gopher.cua.edu and go to the Special Resources section to access the Educational Testing Service Test Collection database, the Buros Test Review Locator, various news bulletins, and full-text resources on alternative assessment. The Catholic University of America, 209 O'Boyle Hall, Washington, DC 20064–3893; (202) 319–5120.

Evaluation Assistance Center–East

This regional information center provides technical assistance to state and local education agencies on evaluation and assessment in education programs funded under Part A of the 1988 Bilingual Education Act, which serves limited-English-proficient students. It also disseminates information and conducts online searches of a test information database. 1730 North Lynn Street, Arlington, VA 22209; (703) 528–3588 or 1–800–925–EACE.

Evaluation Assistance Center–West

This regional information center provides technical assistance to, and collects and synthesizes information for, state and local education agencies on evaluating education programs funded under Part A of the 1988 Bilingual Education Act and serving limited-English-proficient students. The center also disseminates information and conducts online searches of a bilingual education test database. New Mexico Highlands University, 121 Tijeras, NE, Suite 2100, Albuquerque, NM 87102; (505) 242–7447 or 1–800–247–4269.

Joint Committee on Testing Practices

Several professional organizations work cooperatively on this committee in order to advance the quality of testing practices in the public interest. The Joint Committee was initiated by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education. In addition to these three groups, other sponsors include the American Association for Counseling and Development/Association for Measurement and Evaluation in Counseling and Development and the American Speech–Language–Hearing Association. The Joint Committee prepared the *Code of Fair Testing Practices in Education* (1988). Single free copies of the Code may be obtained by writing to the National Council on Measurement in Education, 1230 17th Street NW, Washington, DC 20036. To reach the Joint Committee, write in care of the American Psychological Association, 1200 17th Street NW, Washington, DC 20036.

National Assessment Governing Board

The National Assessment Governing Board was established to develop the policy guidelines for the National Assessment of Educational Progress (NAEP). The Board selects the subject areas to be assessed, develops assessment objectives, identifies appropriate achievement goals for each grade and subject tested, and establishes standards and procedures for interstate and national comparisons. U.S. Department of Education, 800 North Capitol Street NW, Suite 825, Washington, DC 20002–4233; (202) 357–6938.

National Assessment of Educational Progress (NAEP)

NAEP, a congressionally mandated project of the U.S. Department of Education's National Center for Education Statistics, tracks what American students know and can do in several areas, including mathematics, reading, science, writing, U.S. history, and geography. (For information on performance-based aspects of NAEP, see p. 19 of this issue.) NAEP national assessments are administered every 2 years to random samples of students in grades 4, 8, and 12, who also provide information about their backgrounds, activities, and school experiences to aid in the understanding of their performance. In 1990, NAEP began a voluntary state-level assessment program. P.O. Box 6710, Princeton, NJ 08541–6710; 1–800–226–0267.

National Association of Test Directors (NATD)

Members of this association are responsible for testing programs and test development, administration, and interpretation primarily in city and county public school systems. NATD members share information about testing and support research in educational measurement. The group maintains a speaker's bureau, publishes a quarterly newsletter, and compiles annual symposium papers and a yearbook. c/o Ernest Bauer, Oakland Schools, 2100 Pontiac Lake Road, Waterford, MI 48328–2735; (313) 858–2162.

National Center for Fair and Open Testing (FairTest)

This research and public interest group works to ensure that American students and workers are assessed using fair, accurate, relevant, and open tests. FairTest monitors standardized and performance-based testing from prekindergarten readiness and IQ tests

through professional certification exams. It seeks to remove racially, culturally, and sexually biased questions from all standardized tests and certification exams; supports truth-in-testing, which requires testmakers to defend any test questions that are challenged; and conducts research. FairTest also produces and disseminates publications on topics such as the SAT, sex bias, and admissions testing alternatives; conducts educational programs, seminars, and workshops; and maintains a library. 342 Broadway, Cambridge, MA 02139; (617) 864–4810.

National Center for Research on Educational Accountability and Teacher Evaluation

This center, 1 of 25 funded by the U.S. Department of Education's Office of Educational Research and Improvement (OERI), seeks to establish valid methods of measuring what students are learning and models for evaluating teacher, administrator, and school performance. It publishes a newsletter and various reports. Western Michigan University, 401 B. Ellsworth Hall, Kalamazoo, MI 49008–5178; (616) 387–5895.

National Center for Research on Evaluation, Standards, and Student Testing (CRESST)

This OERI-funded research center undertakes research and development projects to improve student testing and evaluation practices. As the summary on p. 20 details, CRESST is particularly interested in issues related to the validity of performance-based assessments. CRESST's findings are disseminated through a newsletter and technical reports. University of California at Los Angeles Graduate School of Education, 405 Hilgard Avenue, Los Angeles, CA 90024–1522; (310) 206–1532.

National Center on Educational Outcomes for Students with Disabilities

This research center collects and evaluates information on how state assessments and national standards affect students with disabilities and studies how alternative testing accommodations and adaptations can be made for these students. The center also works to build consensus among state directors, educators, and parents on what domains of educational outcomes are of importance to all students. University of Minnesota, 350 Elliott Hall, 75 East River Road, Minneapolis, MN 55455; (612) 626–1530.

National Council on Measurement in Education (NCME)

Members of this professional council include test publishers, educational measurement specialists, and educators interested in measuring human abilities, personality characteristics, and educational achievement. NCME produces two quarterly publications, *Educational Measurement: Issues and Practice* and *Journal of Educational Measurement*. 1230 17th Street NW, Washington, DC 20036; (202) 223–9318.

National Education Goals Panel

The National Education Goals Panel is a bipartisan group of state governors, Congress members, and administration officials created in 1990 to monitor U.S. progress toward meeting the National Education Goals. The group prepares annual reports that summarize state and national statistical data related to each of the six Goals. 1850 M Street NW, Suite 270, Washington, DC 20036; (202) 632–0952.

National Research Center on Student Learning

This OERI-funded national center explores how thinking and reasoning skills can be taught and examines how content in various subjects, particularly mathematics, science, and social studies, is learned. The center also investigates exemplary teaching practices and ways to teach students how to become competent thinkers, learners, and problem solvers. Research information is disseminated through a newsletter and technical reports. University of Pittsburgh, Learning Research and Development Center, 3939 O'Hara Street, Pittsburgh, PA 15260 (412) 624–7020.

New Standards Project

The New Standards Project is a joint program of the National Center on Education and the Economy in Rochester, NY, and the Learning Research and Development Center at the University of Pittsburgh. A group of states and local school districts that were far along in designing and administering performance-based assessments have become partners in this effort to produce performance- and portfolio-based assessments linked with high national standards. The partners include the states of Arkansas, California, Colorado, Connecticut, Delaware, Florida, Iowa, Kentucky, Maine, Massachusetts, Missouri, New York, Oregon, Pennsylvania, South Carolina, Texas, Vermont, Virginia, and Washington and the school districts in Fort Worth, New York City, Pittsburgh, Rochester (NY), San Diego, and White Plains (NY). 700 11th Street NW, Suite 750, Washington, DC 20001; (202) 783–3668.

Northwest Regional Educational Laboratory (NWREL)

This regional educational laboratory, 1 of 10 such OERI-funded labs located across the country, operates the Center for Applied Performance Testing. The purpose of this program is to help schools to achieve better assessment of student outcomes and use assessment and evaluation information more effectively. NWREL also maintains a collection of tests and offers a video training series on assessment for teachers and administrators. 101 S. Main Street, Portland, OR 97204; (503) 275–9500 or Gopher to gopher.cua.edu for a pointer to NWREL's new Gopher site.

Research in Action provides you with a synthesis of recent research findings on current trends and issues in education. These brief analyses cover a broad range of topics important to educators, parents, and students. Published by ERIC's 16 subject-specific clearinghouses as ERIC Digests, many are available free from individual clearinghouses, while others are available for a nominal fee. ERIC Digests are also available via GTE, other commercial networks, and the Internet, as well as on a disk-based product called *Query*. For more information, call 1–800–LET–ERIC.

Alternative Assessment: Implications for Social Studies

by Pat Nickell, Director of Instructional Support Services, the Fayette County Public Schools, Lexington, Kentucky, and member of the Curriculum Standards Task Force of the National Council for the Social Studies

ERIC Digest EDO–SO–93–1

Alternative forms of evaluating student progress are changing testing or assessment in our schools. From the teacher-made to the standardized test, the familiar over-emphasis on multiple-choice items is giving way to expanded generative formats in which students are called upon to demonstrate mastery through applications in which they use complex processes and webs of knowledge and skill.

Issues Triggering the Call for Change

Two general issues have come to the fore regarding the evaluation of student achievement in schools: (1) the format of tests; and (2) how test results are used. Accusations regarding the misuse and overuse of tests are certainly disturbing, but there is no guarantee that this issue will be solved simply by changing test types. Whatever the format of the test, if scores continue to be used to classify and track children, the underlying issues remain unresolved. If the numbers of standardized tests administered are maintained at current rates, then our students will continue to be the most thoroughly and frequently tested students in the world, no matter what type of test is administered. However, the remaining issue—that of format and whether continued emphasis on fixed-response testing is valid—is one which reaches directly into the classroom and has clear implications for teachers.

It is widely recognized that alternative assessments are gaining broad acceptance. Large commercial test publishers are beginning to revamp standardized achievement and college entry tests to give greater emphasis to generative-response items as a result of pressure from proponents of alternative assessment. The Center for Research on Evaluation, Standards, and Student Testing found that as of 1990, nearly half of all states in the U.S. were considering implementation of some form of performance assessment in state-level testing. However, teachers maintain control over the form and structure of student assessment in the classroom. If students are to succeed on state and national assessments administered in performance-based formats, such formats must be acceptable to teachers and used in classrooms.

The familiar "test"—anything from a 10-item pop-quiz to a standardized achievement test—has, during the 20th century, come to be dominated by the presumably "objective" format of fixed-response items, most notably

multiple-choice. Critics, however, argue quite convincingly that traditional fixed-response testing does not provide a clear or accurate picture of what students can do with their knowledge. Such testing enables students to demonstrate recall, comprehension, or interpretation of knowledge, but not to demonstrate ability to *use* knowledge.

Critics also assert that standardized, fixed-response testing may be unfairly misaligned with instruction. Questions may be "missed" simply because of unfamiliar language or format—not because the student has no grasp of the concept. Further, detractors maintain that testing isolated facts in an arbitrary order confuses test takers and ignores the importance of holistic "knowing" and integration of knowledge. While it has been strongly argued that fixed-response tests can assess high levels of thinking, proponents of alternative assessments contend that traditional tests are a central cause for the preponderance of low-level cognitive activities in the classroom. In short, multiple-choice testing—whether used to measure student achievement at the classroom, state, or national level—is charged with being a nonauthentic means of assessing students' mastery of either high-level educational objectives or society's expectations.

The Testing Revolution and Social Studies

According to the National Council for the Social Studies, the goal of social studies education is to promote civic competence. The primary purpose is to help young people develop the ability to make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world. An outcomes-based approach requires that we test in authentic ways what is considered to be most important in terms of knowledge, skill, values, and attitudes. Thus, if civic competence is highly valued, then students should be able to demonstrate mastery of civic competence through realistic tasks which match the demands and expectations of society.

Fixed-response testing cannot assess students' ability to function as a competent participant in society. We can learn a great deal from such testing about what the students know about history, geography, government, national policy, global conditions, and the like. This knowledge, of course, is a necessary foundation for critical thinking and civic decision making. However, in terms of how students might go about using knowledge to examine an issue, make a decision, research an idea and synthesize that research in order to make a presentation, initiate a project and see it through, or even evaluate the original idea, we have little to go on. If we really expect students to be able to do these things, then assessment instruments must be designed to provide evidence that such is the case.

Implication 1: The Social Studies Curriculum

The most critical implication of changing assessment types is a curricular one. Grant Wiggins (Nickell, 1992) refers to performance assessment as "exhibitions of mastery." What is it, within the area of social studies, that is to be mastered? Can one, in fact, "master" civic competence in the same way that one can master multiplying three-digit numbers or writing poetry in sonnet form? Returning to the goal and purposes set forth by the National Council and reflected in most school systems' goals and missions statements, we are forced to consider the integrative nature of social studies. If our intended outcome is to enable all students to become competent citizens, we must give less emphasis to mere recall and low-level comprehension of facts and concepts, and more emphasis to applying knowledge to tasks that require high-level cognition. Competent citizens make informed decisions; offer reasonable solutions to social and civic problems; and acquire, synthesize, and communicate useful information and ideas.

An assessment designed to match the goal and purposes of social studies will evaluate student mastery of knowledge, cognitive processes, and skills. To enable students to succeed on such an assessment, it is imperative that the traditional social studies curriculum be reexamined and reorganized to ensure mastery of knowledge, cognitive processes, and behaviors that characterize civic competence.

Implication 2: Social Studies Instruction

A second major implication targets social studies instruction. Students must venture into the real world in order to know it. They must do so in ways that will provide real experiences as active and productive members of the community, structured to allow practice in thinking and acting as a citizen. They must be given opportunities to make decisions that have real consequences; choices that affect the success or failure of an idea. They must experience how problem solving is enhanced by cooperation, and how planning is enriched by identifying alternative means to achieve an end. "Doing" social studies, like doing mathematics, science, or art, is imperative, yet it has been lost to the limitations placed on schools by tight schedules and budgets. The school day should be restructured in order that authentic social studies instruction, involving civic learning in the community, replaces that which relies only on symbols and contrivances. However, the most effective community-based civic learning activities are tightly connected to classroom-based learning of pertinent knowledge and skills.

Implication 3: Social Studies Assessment

A third major implication targets the way we treat assessment in social studies. Assessment should no longer be viewed as separate from instruction. Just as the worker is evaluated on an ongoing basis on the products or services generated, student evaluation is most authentic and equitable when it is based upon the ideas, processes, products, and behaviors exhibited during regular instruction. Students should have a clear understanding of what is ahead, what is expected, and how evaluation will occur. Expected outcomes of instruction should be specified, and criteria for judging degrees of success clearly outlined. Where a certain level of knowledge about a particular topic is expected of all students, it should be understood in advance. Responsibility for each student's success is initially shared by the teacher and student, but once teachers have fulfilled their part, ultimate accountability rests with the student. Thus, the social studies classroom becomes a microcosm of the real

world in which social/civic responsibility and participation is an ongoing process, uninterrupted by "time-outs" for the incongruity of formal testing.

Social studies, often considered to be the most content-oriented of the core curriculum areas, is ripe for reform. The call for alternative assessments only serves to highlight the importance of rethinking current practice in social studies as we recognize once again the close link between the over-arching goal of public education and that of social studies. As the nation moves toward assessments of student achievement that are more closely aligned with what is demanded of us in the real world and that demand student-generated demonstrations of mastery, traditional practices in social studies are called into question. Both curriculum and instruction, often geared toward low-level recall of facts, must be revisited. Test-teach-test modes, in which assessment is treated as separate from instruction, also deserve to be reexamined with regard to how well such practice mirrors how we are evaluated in the real world. Whether or not alternative assessments take hold at state and national levels, the trend has brought us face-to-face with our responsibility as social studies practitioners in schools and classrooms. Traditional practices cannot effectively prepare young people to demonstrate achievement of civic competence.

References and ERIC Resources

The following list of resources includes references used to prepare this Digest. The items followed by an ED number are in the ERIC system. They are available in either microfiche or paper copies from the ERIC Document Reproduction Service (EDRS). For ordering information, contact EDRS, 7420 Fullerton Road, Suite 110, Springfield, VA 22153–2852; (703) 440–1400 or 1–800–443–3742. Entries followed by an EJ number are annotated monthly in *Current Index to Journals in Education* (CIJE), which is available in most libraries. EJ documents are not available through EDRS. However, the journals can be located in the periodical sections of most libraries, or the articles can be ordered through interlibrary loan by using the bibliographic information provided below.

American Association of School Administrators (1989). *Testing: Where We Stand*. Arlington, VA. ED 314 854.

Archbald, Doug A., and Fred M. Newmann (1988). *Beyond Standardized Testing*. Reston, VA: National Association of Secondary School Principals. ED 301 587.

Center for Research on Evaluation, Standards, and Student Testing (1990). *Monitoring the Impact of Testing and Evaluation Innovations Project: State Activity and Interest Concerning Performance-Based Assessment*. Los Angeles: UCLA. ED 327 570.

Haney, Walter, and George Madaus (May 1989). "Searching for Alternatives to Standardized Tests: Whys, Whats, and Whithers." *Phi Delta Kappan*, 70 (9): 683–687. EJ 388 720.

Kellaghan, Thomas, George F. Madaus, and Peter F. Airasian (1982). *The Effects of Standardized Testing*. Hingham, MA: Kluwer-Nijhoff Publishing.

Maeroff, Gene I. (December 1991). "Assessing Alternative Assessment." *Phi Delta Kappan*, 73 (4): 272–281. EJ 435 781.

Medina, Noe J., and D. Monty Neill (1988). *Fallout from the Testing Explosion: How 100 Million Standardized Exams Undermine Equity and Excellence in America's Public Schools*. Cambridge, MA: National Center for Fair and Open Testing. ED 318 749.

Nickell, Pat (February 1992). "Doing the Stuff of Social Studies: A Conversation with Grant Wiggins." *Social Education*, 56 (2): 91–94. EJ 450 735.

Peterson, Kent D. (March 1991). "Effective Schools and Authentic Assessment." *The Newsletter of the National Center for Effective Schools*, 3: 14.

Resnick, Lauren B. (1987). *Education and Learning To Think*. Washington, DC: National Academy Press. ED 289 832.

Shavelson, Richard J. (April 1991). *Authentic Assessment: The Rhetoric and the Reality*. Paper presented at the annual meeting of the American Educational Research Association.

Wiggins, Grant (May 1989). "A True Test: Toward More Authentic and Equitable Assessment." *Phi Delta Kappan*, 70 (9): 703–713. EJ 388 723.

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continued from page 20

The Center for Research on Evaluation, Standards, and Student Testing

To strengthen the assessment network, CRESST sponsors an annual fall conference to enable researchers, practitioners, and policymakers to discuss new models of assessment and how they work in practice. CRESST creates prototypes for assessing students' performance and models for analyzing and validating assessment results. The group also conducts development work in collaboration with state or local constituencies and targeted to their specific goals and objectives.

CRESST recently introduced a new Internet gopher server to provide no-cost access to articles from the *CRESST Line* newsletter, descriptions of CRESST technical reports, and the new CRESST *Alternative Assessments in Practice* database, which contains source information on more than 250 new alternative assessments. The alternative assessments referenced in the database include more than 120 language arts assessment protocols and 55 for mathematics. Although the assessments themselves are not included in the database, many are available from the developers. Computer users with Internet access and a gopher program may access the CRESST server by starting a new gopher and conducting a search for spinoza.cse.ucla.edu. The database is also available on a Macintosh disk for $15.

To obtain a complete listing of CRESST's publications or to receive the newsletter, the *CREST Line*, write to UCLA Graduate School of Education, 405 Hilgard Avenue, Los Angeles, CA 90024–1522.

Laurie E. Gronlund
ACCESS ERIC

New Titles in Education

Below is a sampling of the new publications available from the ERIC system. To order, use the ERIC Directory on the inside back cover to locate the relevant component's mailing address, phone number, or e-mail address.

1994 ERIC Calendar of Education-Related Conferences
Laurie E. Gronlund, editor, 1994

Includes information on 532 international, national, and regional education conferences as well as subject, sponsor, geographic, and ERIC participation indexes. $20 for print version or $25 for diskette from ACCESS ERIC.

Activities for Counseling Underachievers
Jeanne Bleuer, Susanna Palomares, and Garry Walz, 1994

Provides exercises that counselors and teachers can use to motivate and support students in achieving their potential. $12.95 from Counseling and Student Services.

Adult Literacy Education: Current and Future Directions.
Hanna Arlene Fingeret, 1993, Order No. IN 355

Covers the teacher-learner responsibility continuum, the purpose of literacy education, work and literacy, family literacy, and learner assessment. $6 from Adult, Career, and Vocational Education.

Beyond Reading, Writing, and Arithmetic
ERIC Document Reproduction Service, 1993

Provides a retrospective look at how schools have responded to changing societal needs through an examination of articles on child poverty, ESL speakers, teenage pregnancy, and drug and alcohol use from 1966 to the present. $35 from EDRS.

Case Studies in Authentic Assessment
Joe B. Hansen and Walter E. Hathaway, 1993, TME–P–107

Results of a survey of alternative assessment activity. $16.50 from Assessment and Evaluation.

"Changing Managerial Imperatives," ***New Directions for Community Colleges***
Richard L. Alfred and Patricia Carter, editors, 1994

Explores transformations in management approaches to planning, decision making, and using faculty and staff in community colleges. $16.95 from Jossey-Bass, 350 Sansome Street, San Francisco, CA 94104–1310; (415) 433–1740.

Cooperative Learning: A Response to Linguistic and Cultural Diversity
Daniel D. Holt, editor, 1993

Provides teachers with the rationale and practical strategies for creating successful group activities for students from diverse language backgrounds. $18.95 from Delta Systems, 1–800–323–8270.

Current Trends and Issues in Urban Education
Carol Ascher and Gary Burnett, 1993, Trends & Issues #19

Summarizes new developments in urban education and provides resources for further information. $8 from Urban Education.

Educational Media and Technology Yearbook
Donald P. Ely and Barbara B. Minor, editors, 1993, Vol. 19

Covers hot topics, trends, issues, and advancements in the field of educational technology. $60 from Information & Technology.

Five Perspectives on Quality in Early Childhood Programs
Lilian G. Katz, 1993, Order No. 208

Explores quality in terms of program features and the perspectives of children, families, staff, and community. Includes an extensive ERIC bibliography. $12 from Elementary and Early Childhood Education.

Germany and Europe Since World War II, 1945–1993: Resources for Teachers of History, Government, and Geography
James F. Harris and Fay Metcalf, editors, 1993, Item No. 028

Includes essays, lesson plans, teaching ideas, annotated bibliographies, and resource lists to enhance secondary teaching related to postwar Germany and Europe. $12 from Social Studies/Social Science Education.

Greater Than the Sum: Professionals in a Comprehensive Services Model
Rebekah Levin, editor, 1994

Provides an overall picture of comprehensive services and a guide to participants' roles and the structuring of such programs in schools. $22.50 from Teaching and Teacher Education.

Innovation and Development in Special Education: Directory of Current Projects
ERIC/CEC, 1993, Order No. R5027

A compilation of more than 200 federally supported projects funded by the Division of Innovation and Development of the U.S. Office of Special Education Programs. $9 for diskette or print version from Disabilities and Gifted Education.

¡Leamos! Prepare a sus hijos a leer y escribir: 101 ideas/Let's Read! 101 Ideas To Help Your Child Learn to Read and Write
Mary and Richard Behm, 1993, AG45

Presents practical ideas, side-by-side in Spanish and English, for parents who want to help their children develop strong literacy abilities. $11.95 from Reading, English, and Communication.

Perspectives of Hands-On Science
ERIC/CSMEE, 1993, S510

Describes ways to engage students in "doing" science. $12.90 from Science, Mathematics, and Environmental Education.

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Describes reform, renewal, and restructuring, and presents sample restructuring approaches affecting various education dimensions, e.g., learner outcomes and school governance. $19.95 from Educational Management.

Sexual Harassment in Higher Education: From Conflict to Community
Robert O. Riggs, Patricia H. Murrell, and JoAnne C. Cutting, 1993, ASHE–ERIC Report No. 93–2

Defines sexual harassment, explores how it has been experienced at higher education institutions, and discusses how institutions have responded and should respond. $18 from Higher Education.

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Alicia Sosa, 1993

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